Exhibit 1

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

FEDERAL HOUSING FINANCE AGENCY,
AS CONSERVATOR FOR THE FEDERAL
NATIONAL MORTGAGE ASSOCIATION
AND THE FEDERAL HOME LOAN
MORTGAGE CORPORATION,

           Plaintiff,

       -against-

NOMURA HOLDING AMERICA INC.,
NOMURA ASSET ACCEPTANCE
CORPORATION, NOMURA HOME
EQUITY LOAN, INC., NOMURA CREDIT
& CAPITAL, INC., NOMURA SECURITIES
INTERNATIONAL, INC., RBS SECURITIES
INC. (f/k/a GREENWICH CAPITAL
MARKETS, INC.), DAVID FINDLAY,
JOHN MCCARTHY, JOHN P. GRAHAM,
NATHAN GORIN, and N. DANTE
LAROCCA,

           Defendants.

11 CIV. 06201 (DLC)

**EXPERT REPORT OF JOHN A. KILPATRICK, PH.D.
CONCERNING ADHERENCE OF APPRAISALS
TO APPRAISAL STANDARDS AND PRACTICE**

May 15, 2014

Confidential

TABLE OF CONTENTS

Confidential

Confidential

List of Appendices

1-1   Dr. Kilpatrick's Curriculum Vitae

1-2   Dr. Kilpatrick's Trial Testimony

1-3   Dr. Kilpatrick's Appraiser License Numbers by State

1-4   Dr. Kilpatrick's Materials Considered

2-1   Research Data Gathered by Greenfield Advisors

        2-1a   Raw GADGET Data

        2-1b   Collected Data Variable List

        2-1c   CAM Data Elements

        2-1d   GADGET Research Supporting Documents

3-1   USPAP 1999

3-2   USPAP 2000

3-3   USPAP 2001

3-4   USPAP 2002

3-5   USPAP 2003

3-6   USPAP 2004

3-7   USPAP 2005

3-8   USPAP 2006

3-9   USPAP 2008-2009

3-10   USPAP 2014-2015

3-11   State Statutes and Regulations Concerning USPAP

3-12   USPAP Revisions

4-1   Greenfield Credibility Assessment Model (CAM) Operative Files

        4-1a   Greenfield CAM Source Code

        4-1b   Supporting Documentation

4-2   Greenfield Advisors Residential Data Inspection Protocol

4-3   Residential Data Inspection Form

4-4   Welcome Letter to Residential Inspectors

4-5   Inspection Items

        4-5a   Completed Inspection Forms

        4-5b   Researcher Items

        4-5c   Inspection Web Forms

Confidential

List of Tables

List of Figures

1.   Introduction

        A.   Nature of Involvement

On September 2, 2011, the Federal Housing Finance Agency ("FHFA") brought

suit against various entities and individuals associated with Nomura Holding America

(together "Nomura")[1] for, among other things, securities law and other violations arising

out of the offer and sale of certain residential mortgage-backed securities ("RMBS")

certificates to the Federal National Mortgage Association ("FNMA" or "Fannie Mae")

and the Federal Home Loan Mortgage Corporation ("FHLMC" or "Freddie Mac")

between November 30, 2005 and April 30, 2007 (the "Certificates"). FHFA alleges that

Nomura made materially false or misleading statements regarding the underlying

mortgage loans' compliance with applicable underwriting guidelines, the borrowers'

ability to repay, the value of the collateral securing residential mortgage loans underlying

the RMBS at issue, and the statistics relating to loan-to-value ("LTV") and combined

loan-to-value ("CLTV") ratios and owner occupancy statistics in the collateral tables in

the Prospectus Supplements.

        I have been retained by Quinn Emanuel Urquhart & Sullivan, LLP, counsel for

Plaintiff FHFA, Conservator for Fannie Mae and Freddie Mac, to provide an expert

opinion as to whether the original appraisals used to value the collateral and generate the

LTV ratios associated with a sample of the subject loans underlying the 7 supporting loan

---

[1]   These entities and individuals are as follows: Nomura Holding America Inc.
("Nomura Holding"), Nomura Asset Acceptance Corporation ("NAA"), Nomura Home
Equity Loan, Inc. ("NHELI"), Nomura Credit & Capital, Inc. ("Nomura Credit"),
Nomura Securities International, Inc. ("Nomura Securities") (collectively, "Nomura"),
RBS Securities Inc. (f/k/a Greenwich Capital Markets, Inc.) ("RBS Securities"), and
David Findlay, John McCarthy, John P. Graham, Nathan Gorin, and N. Dante Larocca.

groups ("SLGs") collateralizing the 7 securitizations at issue in this Action (the

"Securitizations") were accurate and credible, as that term is used in the *Uniform*

Standards of Professional Appraisal Practice ("USPAP"). My analysis has two

components.

First, as set forth in an accompanying report dated May 15, 2014, I evaluated the

accuracy of the original appraised value of a representative sample of the properties that

collateralized the mortgage loans underlying each of the 7 Securitizations (the "Sample

Properties").[2] Utilizing my experience and training as an appraiser and a retrospective

automated valuation model that I adapted and validated for this project (the "Greenfield

AVM"), I concluded that the original appraised values of a significant number of these

Sample Properties were higher, and often significantly higher, than the appraised values

that should, in my opinion, have been assigned to these properties. My analysis and

opinions concerning the value of these properties, and the resulting impact on the LTV

ratios of the Sample Properties, are set forth in that accompanying report.

Second, for the 208 properties whose original appraised values I concluded were

inflated, I was able to further evaluate 205 appraisals (the "Nomura Appraisals") to

determine whether, in my opinion, a reasonable appraiser adhering to the appraisal

standards and practices applicable at the time could have believed the original appraisals

were accurate. To do so, I evaluated whether the original appraisals complied with the

governing appraisal standards and practices in order to determine whether those

---

[2]   Counsel provided me with the sample of these subject loan properties and their
original appraisals, which I understand were selected by Dr. Charles Cowan (the "sample
Nomura properties").

appraisals were "credible" as that term is defined by USPAP. This analysis, and my

conclusions and opinions, are set forth in this report and its appendices.

To evaluate the adherence of the original Nomura property appraisals with

accepted appraisal standards and practices, I developed and validated a Credibility

Assessment Model ("CAM") that assesses the degree to which the Nomura Appraisals

deviated from the appraisal standards established by USPAP and other established

appraisal guidance and practice. To evaluate the overall credibility of the subject

Nomura appraisal reports, the CAM evaluates and scores the frequency and magnitude of

the appraisal reports' deviation from settled appraisal standards and practice.

To apply the CAM to the original Nomura Appraisals, I directed my staff and

licensed and/or certified appraisers to inspect and gather data regarding the original

appraisals ("Inspections").[3] Based on my review of these Inspections, application of the

CAM, and the results of my analysis of the Nomura Appraisal properties using the

Greenfield AVM, I conclude that it is highly doubtful whether a reasonable appraiser

adhering to the appraisal standards and practices applicable during the relevant time

period could have concluded that the original appraised values of 95.19% of the

---

[3]   Although the Inspections I directed to be performed were not appraisals or
appraisal reviews as described by or covered in USPAP, I nonetheless chose licensed or
state-certified appraisers to perform the inspection because of their training,
qualifications, and ethical obligations. *See* Appendix 4-2, Greenfield Advisors
Residential Data Inspection Protocol; Appendix 4-3, Residential Data Inspection Form;
Appendix 4-4, Welcome Letter to Residential Inspectors; Appendix 4-5a, Completed
Inspection Forms; Appendix 4-5b, Researcher Items; Appendix 4-5c, Inspection Web
Forms. I purposely did not use real estate brokers or broker price opinions ("BPOs") in
this analysis, as real estate brokers are generally not held to the same level of valuation
standards, training, or experience as are the appraisers I utilized.

overstated Nomura Appraisal reports could be accurate, or what is termed "credible"[4] in

the appraisal literature and appraisal profession. Applying a more conservative threshold

for determining credibility,[5] I further conclude that 90.87% of the Nomura Appraisals

could not, in my opinion, have been considered credible by a reasonable appraiser

adhering to appraisal standards and practices applicable at the time the original appraisals

were performed.

Further, to validate my findings, I directed an independent third-party firm,

Recovco Mortgage Management, LLC ("Recovco"), to perform its standard collateral

review on the Nomura Appraisals. A collateral review is similar to a desktop review, the

principal difference being that a collateral review focuses on the appraisal process

utilized in the original appraisal report and does not prepare an independent

determination of value. Recovco's standard collateral review evaluates whether the

original appraisal adhered to USPAP and standard appraisal practice and renders a

conclusion as to whether the appraisal was "weak" (not credible), "moderate" (of

questionable credibility), or "strong" (credible). The Recovco reviewers found that

95.54% of the appraisals reviewed were so egregiously "weak" that they lacked

credibility, and that an additional 4.00% of the appraisals reviewed were only of

"moderate" strength. The results of these collateral reviews were highly correlated to the

---

[4] Prior to 2006, the believability of an appraisal according to USPAP and reasonable practices was referred to as "reliability." In 2006, for consistency of usage, the concept and related discussions in USPAP were henceforth described as an appraisal's "credibility." *See* Appraisal Standards Board, *Uniform Standards of Professional Appraisal Practice* (Appraisal Found. ed. 2006) [hereafter USPAP 2006]; *see also* The Appraisal Foundation, "2006 USPAP and Scope of Work" at 2. I thus use the term "credibility" to include the concept of "reliability."

[5] This threshold was empirically derived based on core appraisal standards with a margin for conservatism. *See infra*, Section 4.E.

results of my CAM analysis, and I therefore concluded that they were highly supportive

of my credibility findings.

> B.   Organization of My Report

The first three sections of my report provide relevant background information for

my conclusions. Section 1 sets forth my qualifications to provide an expert opinion on

the matters discussed herein. Section 2 sets forth the various sources of data I used in my

analysis and the processes I used to gather and validate this data, including the process

utilized to perform the appraisal inspections. In Section 3, I explain the relevant

professional standards and governing bodies that regulate both the original appraisals and

my own work in this report.

Section 4 sets forth the CAM methodology I utilized to assess whether a

reasonable appraiser complying with USPAP and established appraisal practices

applicable at the time could have believed that the original appraisal value was credible.[6]

Specifically, Section 4 sets forth the appraisal questions and characteristics I utilized in

the CAM methodology, the weights I assigned to those characteristics, my reasons for

doing so, and the scoring scheme I utilized to weight these characteristics. In Section 4, I

also explain the threshold I established for credibility in the CAM.

Section 5 sets forth the results of my CAM analysis. I conclude that it was highly

questionable whether a reasonable appraiser could have believed that the appraisal values

in approximately 95.19% of the Nomura Appraisals were credible given their significant,

---

[6]   While I recognize that I cannot opine as to the mental state of any of the appraisers who performed the original appraisals at issue, I believe that my distinction between "credible" and "non-credible" will assist the fact-finder and Court in evaluating that mental state and is consistent with the Court's guidance set forth in its decision on UBS's motion to dismiss, which is located at 858 F. Supp. 2d 306, 324-28 (2012).

and frequent, deviations from USPAP standards and their overstatement of market value

for those properties. Further, in 90.87% of the Nomura Appraisals, the deviations were

so significant and/or frequent that, in my opinion, no reasonable, competent, appraiser

could have believed that the original Appraisals, or the appraised values, were "credible."

Notably, many of these appraisals contain such significant and egregious deviations from

appropriate practice and standards that it is my opinion that in many cases no true

appraisal, as that term is used in appraisal standards and practice, was actually performed

on the subject Nomura properties.

In Section 6, I discuss the results of the standard collateral appraisal reviews I

directed Recovco to perform. Recovco's analysts, each of whom is or has been a

licensed, certified, or assistant appraiser and possesses a strong knowledge base in

collateral review and underwriting, performed detailed reviews of the original appraisals

for the Nomura properties. These collateral appraisal reviews independently determined

that 95.54% of the sampled Nomura Appraisals reviewed were sufficiently weak, such

that they should not have been considered credible at the time they were performed. The

results mirror my own CAM results 88.12% of the time, and I therefore conclude that the

collateral reviews validate my CAM findings that the vast majority of the Nomura

Appraisals were non-credible.

In Section 7, I offer historical context for these conclusions drawn from public

statements by appraisers and the growing body of literature discussing the pressures

placed on appraisers to provide predetermined appraisal values. While I cannot

definitively conclude whether the pressures described in this body of literature account

for the inflated values and deficient nature of the Nomura Appraisals, I consider it relevant context for my findings.

Finally, Section 8 contains information about this assignment as required by USPAP.

My opinions expressed in this report are based on my skills, knowledge, experience, and training, as well as information gathered by or provided to me as of the date of this report, May 15, 2014. The retrospective review values have an effective date as of the date of the original appraisal. Where there was no physical appraisal in the file, and thus no appraisal or effective date, I used the date of origination as the effective date. I understand that I may be asked to testify regarding my opinions contained herein as well as related matters, including those raised by Nomura or the Court in relation to matters set forth in this report. I expect to further elaborate and expand upon the content of my report in any deposition taken of me in this matter and to make my testimony understandable to the Court and jury. To the extent helpful to explain, or to put in context, the subject matters discussed throughout my report, I also expect to provide further explanation of the matters I discuss herein. In connection with any testimony, I may rely on materials referenced in this report and in the appendices and demonstrative exhibits to be prepared before my testimony.

My analysis and work on this engagement is ongoing, and I reserve the right to supplement my opinions and methodology in the event that I become aware of any new information that may affect my opinions or the bases thereof, including in connection with my consideration of expert reports submitted by Nomura.

Introduction

C.   Credentials and Compensation

I am qualified to provide the opinions and conclusions set forth in this report: I

have over 30 years of experience in residential real estate finance, appraisal, and

teaching; I hold a Ph.D. in real estate finance from the University of South Carolina; I am

a visiting scholar in Real Estate Finance at Baruch College, City University of New

York; I am an MAI (designated member) of the Appraisal Institute;[7] and I am presently a

state-certified (general) real estate appraiser in 49 states as well as the District of

Columbia.[8]

The appraisal community has also recognized my achievements. In 2004, the

Appraisal Qualifications Board ("AQB") in Washington, D.C. designated me as a

nationally certified appraisal standards instructor, of which there are only approximately

500 in the United States. Later, in 2004, my appraiser peers honored me with a

nomination to the Appraisal Qualifications Board, as well as naming me a Member (and

later a Fellow) of the Faculty of Valuation of the British Royal Institution of Chartered

Surveyors. I am an elected member of the Real Estate Counseling Group of America and

a Fellow of the American Real Estate Society.

I am the author or editor of four texts on real estate and a contributing author to

three more, most recently *Brownfields: A Comprehensive Guide to Redeveloping*

Contaminated Property (American Bar Association, 3d ed. 2010). I am also currently a

member of the editorial boards of the *Journal of Sustainable Real Estate* and *The*

---

[7]   MAI is a professional designation for real estate appraisers who are
experienced in the valuation and evaluation of commercial, industrial, residential, and
other types of properties, and who advise clients on real estate investment decisions.

[8]   My license renewal in New Mexico is in progress.

Appraisal Journal. I have authored over 100 journal articles, monographs, and working

papers during my career as an appraiser. My scholarship has been cited in articles in the

New York Times, the *Wall Street Journal,* the British journal *Modus*, and other national

and international publications.[9] Further, my paper, *Appraisal Error Terms and*

Confidence Intervals, presented at the American Real Estate Society's 2010 annual

meeting, was named the Best Paper on Real Estate Appraisal, by the Appraisal Institute.

I am the Managing Director of Greenfield Advisors LLC, a real estate appraisal

and economic consulting firm headquartered in Seattle, Washington. The Greenfield

Advisors staff and I are recognized authorities in complex real estate valuation problems.

We have written and lectured extensively on the application of mass appraisal[10] and

statistical methods in class action litigation, and Greenfield Advisors' 2007 white paper,

Certifying the Real Estate Damages Class – An Appraiser's Perspective, is considered an

authoritative writing on the subject.

I have been qualified by numerous state and federal courts as an expert witness on

real estate valuation, mass statistical analysis of real estate properties, contaminated or

otherwise impaired property values, and construction defects.[11] Apart from real estate

valuation, I have been qualified as an expert witness on statistical analysis; business

---

[9] *See*, *e.g.*, Associated Press, *Homes in Historic Areas Worth More*, N.Y. Times, Nov. 3, 1998; Joyce Cohen, *A Shopper's Guide to Historic Properties*, Wall St. J., May 3, 1996; John A. Kilpatrick, *The U.S. Valuation Reconciliation is Still Ongoing*, Modus (Americas ed.), May 2012, at 8.

[10] A mass appraisal is the "process of valuing a universe of properties as of a given date using standard methodology, employing common data, and allowing for statistical testing." Appraisal Inst., *The Dictionary of Real Estate Appraisal* (5th ed. 2010), at 123 (citing USPAP, 2010-2011).

[11] *See* Appendix 1-2, Dr. Kilpatrick's Trial Testimony.

issues, including valuation of contracts and businesses, impacts of business dissolution;

finance; and economics.[12] A more comprehensive set of my professional qualifications,

trial testimony for the past 4 years, and appraisal license information are included in

Appendices 1-1, 1-2, and 1-3, respectively.[13]

I am compensated for my work on this engagement at the rate of $640 per hour

for time expended. At my direction and under my direct supervision, the staffs of

Greenfield Advisors, Forsythe, Inc., Valocity, Inc., and Roulac Global, LLC have

assisted me in this engagement. The payment of my fees is not contingent on the

opinions I render or the outcome of this action.

D.   Information Reviewed and Considered

In connection with this engagement, I assessed various documents and sources

related to the scope of my opinions and analysis, including (i) certain documents

produced by FHFA and Nomura in this action; (ii) loan tapes and original appraisal

reports produced in discovery; (iii) property and sales data from 1998 to 2007;

(iv) various sources of appraisal guidance and literature; and (v) extrinsic data appraisers

typically rely upon in formulating their valuation opinions (*e.g.*, aerial photographs). A

list of the materials that I have relied upon in preparing this report is attached as

Appendix 1-4.[14]

---

[12]   *See id.*

[13]   Appendix 1-1, Dr. Kilpatrick's Curriculum Vitae; Appendix 1-2, Dr. Kilpatrick's Trial Testimony; Appendix 1-3, Dr. Kilpatrick's Appraiser License Numbers by State.

[14]   Appendix 1-4, Dr. Kilpatrick's Materials Considered.

2.   Sources of Data Used for My Analysis

      A.   Synopsis of the Overall Sampling Process

My understanding is that Dr. Charles Cowan selected the 796 sample Nomura

loans for the 7 Securitizations that I analyzed in this report. I understand that he used a

stratified random sample of the loans underlying the 7 SLGs in the 7 Nomura

Securitizations addressed in this report.[15] I evaluated the same sample of loans for my

analysis of appraised values, which is the subject of my accompanying report assessing

the appraised value of the Nomura appraisals within Dr. Cowan's sample. For this

credibility report, I analyzed 205 of the 208 Nomura Appraisals that I concluded had

inflated appraisal values based on the results of the Greenfield AVM.

      B.   Data for the Greenfield Credibility Assessment Model

Data used in the Greenfield Credibility Assessment Model (Greenfield "CAM")

came from several sources: loan tapes, loan files, and inspection research.

         i.   Loan Tapes

I received loan tapes for loans collateralizing the 7 Nomura Securitizations

addressed herein. Under my supervision and direction, Greenfield Advisors staff

extracted appraisal-related information from the tapes, and where not present from the

tapes, then from the original appraisal reports, HUD-1s, and sales contracts. Greenfield

Advisors staff used these extracted data to enter loan and appraisal information into

---

    [15]   In an expert report previously issued in this case, Dr. Cowan detailed the
methodology he utilized to select the sample. *See* Expert Report of Charles D. Cowan,
Ph.D. Regarding the Selection of Statistically Valid Random Samples of Mortgage Loans
for Fifteen FHFA Actions, at 18–29 (Oct. 10, 2012).

Greenfield databases to crosscheck addresses and loan numbers to ensure the accuracy

and reliability of my analysis.

ii.   Loan Files

I directed my staff to access the appraisal-related contents of these loan files and

input them directly into the Greenfield databases via a relational directory system to

ensure accuracy and reliability of all data utilized in my subsequent analyses. At my

direction, data entry specialists at Greenfield Advisors transcribed loan file information

into the Greenfield databases. Additionally, at my direction, my staff tested and queried

the data, which enabled global quality checks of the database and the data contained

therein.[16]

iii.   Inspection Research

Inspection research for the Greenfield CAM comes from two principal sources

(1) in-house research conducted by Greenfield Staff at my direction and under my direct

supervision and (2) research by independent appraisers located around the country that

was performed at my direction and pursuant to my guidance. In total, 70 data elements

were gathered by Greenfield staff and the independent appraisers that were retained to

collect information concerning the Nomura overstated appraisals.[17] These data elements

---

[16]   The retrospective review values in my accompanying Appraisal Accuracy
Report have an effective date as of the date of the original appraisal. Where there was no
physical appraisal in the file, and thus no appraisal or effective date, I used the date of
origination as the effective date.

[17]   The data collected and the process by which it was collected is set forth in
Appendix 2-1, Research Data Gathered by Greenfield Advisors.

form the basis of the answers to the 31 questions that I used to evaluate the degree to

which the Nomura Appraisals deviated from appraisal standards and practice.[18]

These 31 questions and the data elements that inform them focus on the

characteristics and information that are the hallmarks of a credible appraisal, including

whether the following information was included and accurate: the name of the appraiser,

seller/buyer concessions, number of bathrooms, site value, and condition of the property,

neighborhood sales, prior sales listings of the subject properties, market conditions at the

time of the subject properties' sales, as well as the nearest (both time and location) nine

comparables[19] available at the time of the original appraisal.

I selected these 31 credibility questions, and the 70 underlying data elements

based on USPAP, additional appraisal guidance and practices applicable at the time the

Nomura overstated appraisals were prepared, as well as my experience and judgment up

to and through the relevant period.

Of the 70 data elements, 45 were gathered by my staff and 25 were gathered by

the third-party appraisers approved by me and my staff to perform Inspections. To

coordinate the Inspections by independent appraisers, I selected Forsythe Appraisals,

LLC ("Forsythe") and Valocity, LLC ("Valocity") (together "Forsythe/Valocity").[20]

---

[18]   These questions and their relevance to an appraisal's credibility are addressed in Section 4.

[19]   "Comparable" is often shortened to "comp" in the appraisal community, a convention I also follow.

[20]   Forsythe Appraisals, LLC is the largest independent residential appraisal company in the country and has been in operation for more than 70 years with coverage in 24 states. Forsythe Appraisals, How Do You Appraise a Company?, http://www.forsytheappraisals.com/company (last visited Feb. 20, 2014). Valocity, LLC is an appraisal management company ("AMC") owned by Forsythe. With an average of 11 years of appraisal experience, their panel consists of approximately 6,200 licensed and

Confidential   Sources of Data Used for My Analysis

Forsythe is a nationwide residential appraisal firm, employing staff appraisers in over 40

markets across the United States. Valocity is an appraisal management firm that

currently engages appraisers in 29 states. By using these firms, which were able to

identify staff and contract appraisers who had local familiarity with the areas where the

properties were located, I was able to collect reliable additional information from

appraisers familiar with the localities of the subject properties.

       The appraisers selected to perform the Inspections were provided the first page of

the original appraisal report[21] of each overstated Nomura Appraisal and directed to gather

local multiple listing service ("MLS") data regarding comparable sales, including

neighborhood sales, prior sales listings of the subject properties, market conditions at the

time of the subject properties' sales, and the nearest (in terms of both time and distance)

nine comparable sales available at the time of the original appraisal. Where local MLS

data does not report specific data requested (*e.g.*, gross living area or lot size), inspectors

were permitted to use local tax assessor data only if such data was commonly used by

appraisers in that locale.

       In addition to the Forsythe/Valocity Inspections, at my direction and under my

supervision, my staff performed additional Inspections of each Nomura Appraisal.

Through these Inspections, my staff gathered data from both the original appraisal reports

and loan files, such as the name of the appraiser, seller/buyer concessions, number of

---

certified appraisers with 95% national coverage. Valocity, About Valocity,
http://www.valocity.com/index.php/why-valocity (last visited Feb. 20, 2014).

    [21]   The first page of the appraisal report provides important information about the
subject and neighborhood, but it does not include the actual analysis or opinion of value.
It was my intention that the inspectors' work not be influenced by these analyses and
value determinations.

bathrooms, and site value. My staff of inspectors also gathered information from public

sources, such as tax assessment data, maps, aerial and street-level photographs, and other

data typically considered by an appraiser or an appraisal reviewer.

The data collected by Forsythe/Valocity and my staff Inspections were then

quality-control checked by other staff members of Greenfield, combined, and appended

to the data file for each sample Nomura appraisal being analyzed.[22] Specifically, before

Forsythe/Valocity information was appended to our files, the information was checked

for completeness, reasonableness, and adherence to my directives.

C.   Appraisal Reviews

In addition to assessing the credibility of the Nomura Appraisals through an

inspection and scoring methodology, Recovco was engaged to perform its standard

detailed collateral review on the Nomura Appraisals. Recovco's reviewers, each of

whom is a licensed, certified, or assistant appraiser and possesses a strong knowledge

base in collateral review and underwriting, performed detailed reviews of the original

appraisals for the Nomura properties. The reviewers were not told whether a retroactive

appraisal had suggested that the original appraised value was inaccurate or that the

appraisal lacked credibility. The original appraisals were analyzed by Recovco for

accuracy in reporting original appraisal data, preparing the appraisal analysis (*e.g.*,

application of and scope of adjustments), reconciling data and analysis to produce a

valuation conclusion, and adherence to industry standard requirements for appraisal

---

[22]   Each item of data was subjected to at least one complete quality control
review, and in the case of Forsythe/Valocity data, two (one at Forsythe/Valocity, and one
in-house at Greenfield).

standards and compliance (*i.e.*, USPAP, government-sponsored enterprise ["GSE"], and industry standard guidelines).

These collateral reviews served two purposes. First, of the 208 Nomura Appraisals that were analyzed for credibility determinations, 202 Nomura Appraisals were reviewed by Recovco, from whom I obtained independent validation of the credibility of the original appraisal. Recovco's analyses were purposely completed blindly, meaning Recovco had no knowledge of either Greenfield AVM values or CAM scores for the subject appraisals, to ensure truly independent analyses. Second, these collateral reviews provided an additional means of evaluating the accuracy of the CAM methodology. As I set forth in greater detail in Section 6, the Recovco collateral reviews support the CAM results, indicating that 95.54% of the 202 Nomura sample properties demonstrated significant and/or frequent discrepancies indicative of a non-credible appraisal.

3.   Appraisal Standards Used in Evaluating the Sample Nomura Property Appraisals

This section identifies real property appraisal standards as well as governing bodies for enforcing valuation guidelines. I highlight those standards that any competent appraiser would have been aware of and followed when performing appraisals for the Nomura properties, including USPAP and other standards of practice and guidance applicable during the relevant time period.[23] I also set forth the standards of practice for appraisal review and mass appraisal that govern the work I performed in connection with the analysis described in this report.[24]

A.   The Uniform Standards of Professional Appraisal Practice, Governing Bodies, Legislation, and Standards

i.   The Appraisal Institute, the Ad Hoc Committee, and the Appraisal Foundation

Appraisal governing bodies are an integral part of the residential real estate sector. In 1932, real estate appraisers from across the country formed the American Institute of Real Estate Appraisers ("AIREA") as an affiliate of the National Association of Realtors. Shortly thereafter, the U.S. Building and Loan League established the Society of Real Estate Appraisers ("SREA") to develop appraisal guidelines and standards. AIREA and SREA merged into the Appraisal Institute in 1991, which today remains the principal appraisal governing body,[25] dedicating itself to "advanc[ing] professionalism and ethics,

---

[23]   During the relevant period, several versions of USPAP applied. Although the operative rules and standards for my purposes were consistent across the period, I indicate where USPAP performed editorial and organizational updates to the relevant sections. Appendices 3-1 through 3-9 contain the applicable versions of USPAP.

[24]   *See* Appendix 3-10, USPAP 2014-2015.

[25]   Appraisal Institute, *Our History*, http://www.appraisalinstitute.org/about/history.aspx (last visited Feb. 20, 2014).

global standards, methodologies, and practices through the professional development of property economics worldwide."[26]

During the 1980s, in response to the savings and loan crisis, the governing appraisal bodies and the system for administering appraisal standards were overhauled. In 1986, the leading appraisal organizations in the United States and Canada, including AIREA and SREA, formed the Ad Hoc Committee on the Uniform Standards of Professional Appraisal Practice. This joint task force established a set of minimum industry standard that ultimately became the *Uniform Standards of Professional Appraisal Practice.* The Committee also established The Appraisal Foundation ("TAF"), and, within TAF, created the Appraisal Standards Board ("ASB") to implement and curate these standards. The first version of USPAP went into effect on January 30, 1989, and has since remained the standard of generally accepted professional appraisal practice.[27]

USPAP promotes and maintains the high level of public trust in the appraisal practice by establishing minimum standard requirements for the appraisal profession.[28]

---

[26]   Appraisal Institute, *About the Appraisal Institute*, http://www.appraisalinstitute.org/about/ (last visited Feb. 20, 2014). Since its inception, the Appraisal Institute has grown to become an association of approximately 23,000 valuation professionals spanning 60 countries across the globe. *Id.*

[27]   Appraisal Foundation, *History of the Foundation*, http://www.appraisalfoundation.org (last visited June 17, 2013). The Appraisal Foundation is the leading organization for developing and advocating professional appraisal standards with governing bodies at the state and federal level, users in related industries, and the public. The Appraisal Foundation also oversees the activities of its boards and advisory councils: the Appraisal Practices Board ("APB"), the Appraisal Standards Board ("ASB"), and the Appraisal Qualifications Board ("AQB"). *Id.* at *Welcome to the Appraisal Foundation.*

[28]   USPAP 2014-2015, at U-5 (Preamble).

Confidential   Appraisal Standards

USPAP establishes the ethical and performance obligations of appraisers through

definitions, rules, standards, and statements. The hallmarks of a credible appraisal under

USPAP are competence, impartiality, objectivity, and independence.[29] USPAP standards

are widely accepted; nearly every state in the U.S. has passed laws or regulations

enforcing at least some portion of USPAP, and many states have adopted USPAP in its

entirety.[30] For the subject loans in this matter, all of the overstated Nomura Appraisals

were represented by the appraiser as having been performed in conformance with all

applicable requirements of USPAP.[31]

The importance and relevancy of appraiser adherence to USPAP cannot be

overstated. According to the preamble statement in USPAP, "[c]ompliance with USPAP

is required when either the service or the appraiser is obligated to comply by law or

regulation, or by agreement with the client or intended users." To meet State licensing

and certification requirements, an appraiser must successfully pass an initial National

USPAP education requirement and then maintain an ongoing updated education for

USPAP for each license renewal period.

---

[29]   USPAP 2014-2015, at U-7, U-11; see also USPAP 2006, at 7; *see also id.* at 13 ("An appraiser must not allow the intended use of an assignment or a client's objectives to cause the assignment results to be biased.").

[30]   Appendix 3-11 provides a non-comprehensive but representative list of USPAP-related laws and regulations from across the country. Appendix 3-11, State Statutes and Regulations Concerning USPAP.

[31]   *See infra*, Section 4.B. As required by their respective state licensing laws and confirmed by my review of the respective appraisal reports contained in the underlying loan files, appraisers affirmed that their appraisals conformed to USPAP. USPAP Standard 1, dealing with appraisal development, and Standard 2, dealing with appraisal reporting, are most relevant to my analysis.

Furthermore, the Appraiser's Certification page contained in each one of the appraisal reports analyzed clearly states that the appraisal was prepared, "in accordance with the requirements of [USPAP]."

Although USPAP violations may seem to be of a technical consequence, they absolutely call into question the validity and credibility of the appraisal report. An appraisal prepared in breach of the legal requirements of the profession is not only in violation of State licensing requirements and the appraiser's own certification, but in almost all instances, it is in violation of the contractual obligations for sale of the loan on the secondary market.

           ii.   Financial Institutions Reform, Recovery and Enforcement Act

In response to the savings and loan crisis, Title XI of the Financial Institutions Reform, Recovery and Enforcement Act of 1989 ("FIRREA") was enacted to protect both the public and financial institutions with a uniform set of appraisal standards, as well as to expand oversight from governing bodies.[32] It provides that "real estate appraisals utilized in connection with federally related transactions [be] performed in writing, in accordance with uniform standards, by individuals whose competency has been demonstrated and whose professional conduct will be subject to effective supervision."[33] My understanding is that Congress may not directly interfere with the appraiser licensing

---

[32]   I provide a description of FIRREA solely for historical context for the regulation of appraisers.

[33]   12 U.S.C. § 3331.

bodies of the individual states. However, sections of FIRREA work together essentially

to require all appraisers across the nation to meet minimum USPAP standards.[34]

Furthering USPAP's reach, FIRREA also established the Appraisal Subcommittee

("ASC") to monitor and regulate state appraisal licensure bodies.[35] The ASC also is

tasked with overseeing the "practices, procedures, activities, and organizational structure

of the Appraisal Foundation."[36] TAF, in turn, helps to carry out FIRREA's goals through

two main groups. The Appraisal Standards Board ("ASB"), comprising seven appointed

appraisers serving 3-year terms, is responsible for the development, interpretation, and

amendment of USPAP.[37] The Appraisal Qualifications Board ("AQB"), comprising at

least five appointed appraisers serving 3-year terms, establishes the minimum education,

experience, and examination requirements for state certification under FIRREA.[38]

---

[34] FIRREA creates a distinction between state *licensed* appraisers, or those appraisers who have met certain requirements set by the state in which they reside, and state *certified* appraisers. *See* 12 U.S.C. § 3345. State *certified* appraisers, though also receiving a license through their state authorities, are required to meet heightened standards set by FIRREA to qualify for federally related work (essentially, they are required to be familiar with and follow USPAP standards). *See id.* FIRREA also requires that virtually all federally related appraisal transactions be performed by state *certified* appraisers. 12 U.S.C. § 3342.

[35] 12 U.S.C. § 3332.

[36] *Id.*

[37] The Appraisal Foundation, *Appraisal Standards Board*, https://netforum.avectra.com/eweb/DynamicPage.aspx?Site=taf&WebCode=ASB (last visited Feb. 20, 2014). Before 2006, the ASB promulgated USPAP updates annually. USPAP 2006, however, applied until January 1, 2008. Since 2008, USPAP has been updated biennially.

[38] The Appraisal Foundation, *Appraisal Qualifications Board*, https://netforum.avectra.com/eweb/DynamicPage.aspx?Site=taf&WebCode=AQB (last visited Feb. 20, 2014).

Although Title XI applies only to appraisers who appraise properties for federally related real estate transactions, by heightening the standards required to access this desirable work, FIRREA requires states to prescribe and enforce appraiser standards to ensure the eligibility of its appraisers for federal work. Through the efforts of the ASC, ASB, and AQB in creating a uniform standard that satisfies FIRREA, most states have opted simply to conform their licensing programs with FIRREA in lieu of maintaining predecessor programs.[39] Thus, USPAP is today widely considered the *de facto* standard for appraisers nationwide.

Further, FIRREA-compliant appraisals, including all the appraisals for the subject loans in this case, are completed using standardized Fannie Mae or Freddie Mac forms—predominantly the Uniform Residential Appraisal Report ("URAR") form known as Fannie Mae Form 1004 or Freddie Mac Form 70 (used primarily for single-family residential properties, or single-family residential properties with an accessory living unit). These forms uniformly require the appraiser to certify that he or she "performed th[e] appraisal in accordance with the requirements of the Uniform Standards of Professional Appraisal Practice that were adopted and promulgated by the Appraisal Standards Board of the Appraisal Foundation and that were in place at the time th[e] appraisal report was prepared."[40]

---

[39]   *See* Appendix 3-11, State Statutes and Regulations Concerning USPAP.

[40]   Fannie Mae Form 1004, https://www.fanniemae.com/content/guide_form/1004.pdf; Freddie Mac Form 70, http://www.freddiemac.com/sell/forms/pdf/70.pdf. Although URAR Forms 1004/70 are referenced here, virtually all Fannie Mae and Freddie Mac appraisal forms require similar appraiser certifications declaring the appraiser's adherence to USPAP. *See*, *e.g.,* Fannie Mae Form 2055, https://www.fanniemae.com/content/guide_form/2055.pdf; Freddie Mac Form 72, http://www.freddiemac.com/sell/forms/pdf/72.pdf.

In addition to governing state regulation of appraisers, Title XI of FIRREA also

standardizes the appraisal industry through the federal banking system by requiring

relevant agencies to "prescribe appropriate standards for the performance of real estate

appraisals in connection with the federally related transactions under the jurisdiction of

each such agency or instrumentality."[41]   At a minimum, the designated agencies are to

require that real estate appraisals be in writing and USPAP-compliant.[42]   Thus, even if an

appraiser were licensed in one of the few states that does not mandate USPAP

compliance, the appraiser would still be required to follow USPAP for any work on the

behalf of a federal lender.[43]

In compliance with FIRREA, each agency separately enacted a set of regulations

in 1992, but they ultimately came together to issue the *Interagency Appraisal and*

Evaluation Guidelines in 1994.[44]   These Interagency Guidelines provide guidance to

residential real estate lenders regarding appraisals, explaining in detail how FIRREA

affects their relationships with appraisers.   For example, the Interagency Guidelines

provide direction on instituting a lender-based appraisal and evaluation program to ensure

---

[41]   12 U.S.C. § 3339; 12 U.S.C. § 3350(6).

[42]   12 U.S.C. § 3339. The agencies have further authority to require any
additional standards necessary to achieve those two primary goals.

[43]   Title XI applies to all "federally related transactions," which was broadly
defined as any real estate-related transaction requiring an appraisal that a federal financial
institutions regulatory agency or the Resolution Trust Corporation engages in directly,
contracts for, or simply regulates. 12 U.S.C. § 3350(4).

[44]   *E.g.,* Bd. of Governors of the Fed. Reserve Sys., *Interagency Appraisal and
Evaluation Guidelines* at 4 (Oct. 27, 1994) [hereinafter 1994 Interagency Appraisal and
Evaluation Guidelines]. All four agencies issued identical guidelines, but for simplicity,
this report will cite only to the version issued by FRB. These guidelines were amended
in 2001, 2003, and 2006, but not with respect to their basic tenets. The 2010 amendment,
in which NCUA joined, superseded the 1994 guidelines and remains in effect today.
Interagency Appraisal and Evaluation Guidelines, 75 Fed. Reg. 77,450 (Dec. 10, 2010).

the quality of the appraisals received.[45] The Interagency Guidelines also give insight on

selection of appropriate appraisers,[46] protection of the independence of appraisers from

institution-related bias,[47] determination of which transactions are covered by the

Interagency Guidelines,[48] and the acceptability of various appraisal methodologies.[49]

Most importantly, the Interagency Guidelines set forth five minimum appraisal

standards with which all applicable appraisals must comply.[50] First, the appraisal must

conform to USPAP and the principles of safe and sound banking (*e.g.*, the appraiser

should not appraise a property in which he has an interest).[51] Second, the appraisal report

must be written and contain sufficient information and analysis to support the

institution's decision to engage in the transaction.[52] Third, the appraisal report must

analyze and report appropriate deductions and discounts for proposed construction or

renovation, partially leased buildings, non-market lease terms, and tract developments

with unsold units.[53] Fourth, the appraisal must use the agency definition of market value

as defined in the relevant agency's regulations.[54] Fifth, the appraisal must be performed

---

[45]   1994 *Interagency Appraisal and Evaluation Guidelines* at 4.

[46]   *Id.*

[47]   *Id.* at 5.

[48]   *Id.*

[49]   *Id.* at 6-7.

[50]   The 2010 revision of the Interagency Guidelines further explained, but did not change, these minimum standards. 75 Fed. Reg. at 77,459–60.

[51]   1994 *Interagency Appraisal and Evaluation Guidelines* at 5.

[52]   *Id.*

[53]   *Id.* at 6.

[54]   *Id.*

by a State-licensed or certified appraiser.[55] Thus, even if appraisers had not been

required to follow USPAP by their respective states, they would still have been required

by lenders to comply any time the appraisal was for a federally related transaction.

        iii.   Licensure

In 1991, the AQB adopted three primary real property appraiser classifications:

Licensed Residential, Certified Residential, and Certified General.[56] A separate

classification for Trainees was adopted in 1993.[57] Since that time, the criteria for

becoming a licensed residential appraiser has changed, but the basic requirements for

each classification continue: all classifications are subject to USPAP, have minimum

experience and education requirements, require continuing education in the field beyond

the date of licensure, and all non-trainee classifications require an examination before

licensure.[58]

Adopted for implementation starting in 1998, the AQB increased the continuing

education requirement from 10 to 14 hours per year in the 1994 update.[59] At the same

time, the AQB increased experience requirements for individuals pursuing licensure:

2,500 hours for Certified Residential and 3,000 hours for Certified General, an increase

---

[55] *Id.*

[56] The Appraisal Foundation, *Real Property Appraiser Qualification Criteria*,
https://netforum.avectra.com/eWeb/dynamicPage.aspx?Site=TAF&WebCode=RPCriteria
(last visited Mar. 6, 2013).

[57] *Id.*

[58] Appraisal Qualifications Board, Appraisal Foundation, *A Guide For Understanding the 2008 Real Property Appraiser Qualification Criteria*, at 6 (2007).

[59] *Id.*

of 500 hours from the 1994 requirements for each classification.[60] Finally, USPAP

education requirements were more clearly defined, now specifically requiring completion

of 15 classroom hours.[61]

Effective in 2003, the AQB again bolstered and consolidated USPAP coursework

requirements when it adopted the Program to Improve USPAP Education.[62] Since then,

individuals seeking credentials in the field of real property valuation are required to

attend and complete a 15-hour nationwide USPAP course (or its equivalent), as well as a

7-hour USPAP refresher course every 2 years.[63] At the request of state licensing officers,

existing course instructors were also subject to additional scrutiny, having to pass an

instructor certification exam and meet performance standards.[64] This Program to

Improve USPAP Education has resulted in all USPAP classes being taught by AQB-

certified instructors. I am one of only about 500 appraisers in the United States certified

by the AQB to teach USPAP, and my certification, which was first issued in 2004, is

active through March 2016.

B.   Standards Applicable to Appraisers Leading up to 2007

Below I set forth relevant industry standards applicable at the time of the

origination of the subject loans for the performance of the overstated Nomura Appraisals.

---

[60]   *Id. See also* Appraisal Subcommittee, *1994 Annual Report of the Appraisal Subcommittee of the Federal Financial Institutions Examination Council* at 49 (Jan. 31, 1995).

[61]   Appraisal Qualifications Board, *supra* note 58.

[62]   Appraisal Qualifications Board, *supra* note 58.

[63]   Appraisal Qualifications Board, *supra* note 58.

[64]   Appraisal Qualifications Board, *supra* note 58. *See also* Appraisal Subcommittee, letter regarding the AQB May 10, 2000 Exposure Draft (June 27, 2000).

These standards form the basis for assessing whether a reasonable appraiser following USPAP and other well-established standards would have believed the appraisal.

Overall, the 2014-2015 version of USPAP governs this report. While a retrospective review is conducted under the standards in effect as of the date of the review, here USPAP 2014-2015, the original appraisal is held up to the standards in effect when that appraisal was conducted. The subject Nomura appraisals were conducted between 2003 and 2006.[65] Thus, the USPAP standards from that period are applied to the original appraisals. For purposes of this report, I refer to the 2005 version as a representative applicable version and note relevant changes in other applicable versions of USPAP as appropriate.[66] For completeness, I have provided the 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2008-2009, and 2014-2015 editions of USPAP in Appendices 3-1 through 3-10, respectively. For my analysis, no significant variations exist among the relevant versions of USPAP, although the document did experience several editorial revisions during the period.[67]

---

[61]   Regarding loans originated up to 3 years before the cut off dates for the securitized loan pools, it is my understanding that some underwriters warehoused some loans from 2003–2005 for various reasons, and then added those loans to these securitizations to liquidate those warehouse positions.

[66]   *See* Appendix 3-12, USPAP Revisions.

[67]   The 2005 edition had an effective date of January 1, 2005, and the 2006 edition was effective July 1, 2006. The 2006 edition was the last annual publication before USPAP changed to a 2-year publication cycle. The next revision became effective on January 1, 2008, and covered the 2008–2009 period. *See* Appendix 3-12, USPAP Revisions. For completeness, I have also included USPAP versions in effect from 1999 to 2009. *See* Appendix 3-1 USPAP 1999, Appendix 3-2 USPAP 2000, Appendix 3-3 USPAP 2001, Appendix 3-4 USPAP 2002, Appendix 3-5 USPAP 2003, Appendix 3-6 USPAP 2004, Appendix 3-7 USPAP 2005, Appendix 3-8 USPAP 2006, and Appendix 3-9 USPAP 2008-2009.

     i.   USPAP Standards for Credible Appraisals

   In order to be considered credible, an appraiser must comply with USPAP.

USPAP 2005 Standard 1 outlines standards and procedures for real property appraisal

development. Standards Rule 1-1 provides overarching rules applicable to every stage of

appraisal development. It ensures that appraisers utilize proper training, diligence, and

professional judgment to arrive at credible appraisals.[68] Standards Rule 1-1 directs that:

> In developing a real property appraisal, an appraiser must: (a) be aware of, understand, and correctly employ those recognized methods and techniques that are necessary to produce a credible appraisal; (b) not commit a substantial error of omission or commission that significantly affects an appraisal; and (c) not render appraisal services in a careless or negligent manner, such as by making a series of errors that, although individually might not significantly affect the results of an appraisal, in the aggregate affects the credibility of those results.[69]

   This requirement is further reflected in the appraiser's scope of work

requirements, as outlined in Standards Rule 1-2(f) and the Scope of Work rule.

> The scope of work is acceptable when it is consistent with: the expectations of participants in the market for the same or similar appraisal services; and what the appraiser's peers' actions would be in performing the same or a similar assignment in compliance with USPAP.[70]

   Standards Rule 2-2(b), which governs the contents of a summary appraisal report,

provides further guidance in subsections vii and ix. In the first section, it states that the

appraiser is to:

---

  [68] The term "reasonable appraiser standard" is often used in U.S. and Canadian appraisal practice to describe the standard of credibility in the profession. *See* Tony Sevelka, *Appraisal Standards and Professional Negligence Claims*, 72 Appraisal J., 339–354 (Fall 2004).

  [69] USPAP 2005, S.R. 1-1 (comments omitted).

  [70] USPAP 2005, S.R. 1-2(f).

Summarize sufficient information to disclose to the client and any intended users of the appraisal the scope of work used to develop the appraisal.[71]

This requirement is to ensure that the client and intended users whose expected reliance on an appraisal may be affected by the extent of the appraiser's investigation are properly informed and are not misled as to the scope of work. The appraiser has the duty to support the scope of work decision and the level of information included in a report.[72]

Standards Rules 1-5 and 1-6 (which, like Standards Rules 1-1 and 1-2, do not allow for deviation) address the credibility and accuracy of the specific calculations and valuation methodology the appraiser employed.

> Standards Rule 1-5. In developing a real property appraisal, when the value opinion to be developed is market value, an appraiser must, if such information is available to the appraiser in the normal course of business: (a) analyze all agreements of sale, options, or listings of the subject property current as of the effective date of the appraisal; and (b) analyze all sales of the subject property that occurred within the three (3) years prior to the effective date of the appraisal.[73]

> Standards Rule 1-6. In developing a real property appraisal, an appraiser must: (a) reconcile the quality and quantity of data available and analyzed within the approaches used; and (b) reconcile the applicability or suitability of the approaches used to arrive at the value conclusion(s).[74]

In short, USPAP Standard 1 requires the appraiser to develop a property appraisal in a clear and legitimate manner, with adequate support for analyses and opinions, taking careful steps not to mislead or misconstrue available data or the physical characteristics

---

[71]   USPAP 2005, S.R. 2-2(b).

[72]   *See also* USPAP 2005, Ethics Rule ("an appraiser must perform assignments ethically and competently"; "an appraiser must not communicate assignment results in a misleading or fraudulent manner").

[73]   USPAP 2005, S.R. 1-5 (comments omitted).

[74]   *Id.*, S.R. 1-6 (comments omitted).

of the property. The appraiser is required to follow the rules set forth by USPAP while

applying a clear and supportable methodology. The appraiser is also responsible for

justifying the use and application of the data pertaining to the subject, as well as market

data influencing the value of the subject.

ii.   Supplemental Standards Regarding Credibility

In addition to USPAP, other rules or standards imposed by government agencies

and GSEs apply to appraisal assignments and inform the industry standard of what

constitutes a credible appraisal.[75] I briefly highlight a few of those in this section.

USPAP provides guidance for these other rules or standards under the

Supplemental Standards Rule of USPAP:

> USPAP provides the common basis for all appraisal practice.
> Supplemental standards applicable to assignments prepared for specific
> purposes or property types may be issued (i.e., published) by government
> agencies, government sponsored enterprises, or other entities that establish
> public policy. An appraiser and client must ascertain whether any such
> published supplemental standards in addition to USPAP apply to the
> assignment being considered.[76]

*U.S. Department of Housing and Urban Development and Federal Housing
Administration*

In addition to TAF, the U.S. Department of Housing and Urban Development

("HUD") and the Federal Housing Administration ("FHA"), which became a part of

HUD in 1965, also have regulatory power over the standards and procedures associated

with residential appraisals.

---

[75]   A reasonable appraiser at the time of these underwritings, familiar with both
the USPAP Supplemental Standards Rule and USPAP Statement 10, would understand
that these GSE rules and standards also constituted requirements for appraisal analysis
and content. USPAP 2005, at lines 476–494 and 3671–4254.

[76]   USPAP 2005, at lines 477–481.

FHA provides mortgage insurance for loans made by approved lenders. FHA's

insurance focuses on mortgages for single- and multi-family homes, manufactured

homes, and hospitals. FHA is the world's largest mortgage insurer, accounting for more

than 34 million properties since its inception.[77]

HUD released *Handbook 4150.2, Valuation Analysis for Single Family One- to

Four-Unit Dwellings* in July 1999. Chapter 6 of the handbook, titled "Appraisal and

Appraiser Monitoring," described the review process as a "critical quality control and

performance mechanism."[78] HUD identifies FHA as the principal monitor for appraisers

and their appraisals via field reviews and other analytical work. In addition, FHA

designates candidates for field reviewers, while HUD's Real Estate Assessment Center

("REAC") conducts statistics-based analysis of appraisers and properties in an effort to

identify appraisals for review. FHA also has the enforcement power to take action if such

reviews indicate that performance does not comply with FHA guidelines.[79]

Fannie Mae and Freddie Mac

Fannie Mae considers USPAP to be minimum appraisal standards and publishes

its own appraisal and loan underwriting guidelines,[80] which the original appraisers of the

---

[77]   U.S. Department of Housing and Urban Development, *The Federal Housing Administration (FHA)*, http://portal.hud.gov/hudportal/HUD?src=/program_offices /housing/fhahistory (last visited Mar. 6, 2013).

[78]   U.S. Department of Housing and Urban Development, *Handbook 4150.2, Valuation Analysis for Single Family One- to Four-Unit Dwellings*, 6-0 (1999).

[79]   *Id.*

[80]   *See, e.g.*, Fannie Mae, *Fannie Mae Single Family 2002 Selling Guide*, Section XI:203. Similar language was contained in subsequent versions of the Selling Guide.

inflated Nomura Appraisals would have known and should have followed.[81] The Fannie

Mae Selling Guide clarifies processes for property appraisals and related reports. Fannie

Mae communicates new or modified policies and procedures, clarifies existing policies,

and notifies relevant parties of other important changes through frequent announcements,

lender letters, and notices. The announcements are considered amendments to the Selling

Guide.[82] New issues of the Selling Guide are issued periodically to incorporate these

changes.

The 2007 edition of the Fannie Mae Selling Guide explained that these processes

have been developed "with the intent of ensuring that the Uniform Standards of

Professional Appraisal Practice [USPAP] are followed and that our policies are entirely

consistent with, and supportive of, fair lending practices."[83]

Similar to USPAP, the Selling Guide conveys Fannie Mae's expectation that

appraisers analyze and report on contracts and data related to property sales history while

identifying the property and its related taxes and assessments. Further, the appraiser is

responsible to conduct an adequate market and neighborhood analysis, specifically

focused on data points that affect a given subject's value.

---

[81] During the period of interest (and still true today), substantial numbers of residential appraisals were performed on loans backed by the GSEs and as such were required to comply with the respective GSE's Selling Guide. Given the ubiquity of these appraisals, the Selling Guides operated as *de facto* standards for residential appraisers. Moreover, the specific appraisers of the inflated Nomura Appraisals documented their appraisals on GSE forms (typically the Fannie Mae Form 1004 or Freddie Mac Form 70), indicating that the appraisers were familiar with GSE guidelines and were demonstrating compliance.

[82] Fannie Mae, *Selling and Servicing Guides,* http://documents.efanniemae.com/sf/guides/ssg/ (last visited Mar. 27, 2013).

[83] Fannie Mae, *Fannie Mae Single Family 2007 Selling Guide. Part XI:* Property and Appraisal Guidelines, at 121 (2007).

Section XI, 403.06 of the Selling Guide discusses present land use expectations for appraisers.[84] Other significant factors subject to appraiser analysis include the physical characteristics of the property's site, such as zoning, utilities, Federal Emergency Management Agency ("FEMA") Flood Zone reporting, and off-site improvements.

In the same way that the Fannie Mae Selling Guide requires appraisers to consider neighborhood data that can affect property value, it also requires the appraiser to analyze and consider comparable sales in an appraisal. The appraiser must submit a minimum of three comparable sales to the appraisal report process. The appraiser must then adjust the comparables to the subject property based on, but not limited to, location, sale conditions, and the comparable properties' physical characteristics. When there are an insufficient number of comparable sales in the pertinent area, the Selling Guide allows an appraiser to use comparable sales that are less than ideal provided that the appraisal report explains why less than ideal comparables were utilized.

By elaborating on expectations for appraisers, whether conducting a sales comparison, cost, or income approach to value, Fannie Mae affirms USPAP while establishing its own additional expectations. By following USPAP and the Selling Guide, appraisers are expected to provide "a comprehensive and logical analysis of the neighborhood and the property" so that the lender's underwriter "should be able to reach a sound conclusion on the adequacy of the property as security for the mortgage."[85]

---

[84]   *Id.* at 409.

[85]   *Id.* at 425.

Appraisal Standards

Freddie Mac also provides criteria for assessing the credibility of appraisals, in its

Single-Family Seller/Servicer Guide.[86] Freddie also offers a listing of unacceptable

appraisal practices that would breach the Seller's warranty "as to the professional quality

of the inspection," some of which include:

- development of and/or reporting an opinion of market value that is not supportable by market data or that is misleading;

- failure to adequately analyze and report any current contract of sale, option, offering, or listing of the subject property and the prior sales of the subject property and the comparable sales;

- selection and use of inappropriate comparable sales or the failure to use comparable sales that are locationally and physically the most similar to the subject property;

- use of adjustments to the comparable sales that do not reflect the market's reaction to the difference between the subject property and the comparable sales, not supporting the adjustments in the sales comparison approach, or the failure to make adjustments when they are clearly indicated; and

- development of and/or reporting an appraisal in a manner that is inconsistent with the requirements of the Uniform Standards of Professional Appraisal Practice that were in place as of the effective date of the appraisal.[87]

Fannie Mae and Freddie Mac produce review forms to be used in the process of

reviewing an individual residential appraisal report. For a single-family or condominium

residence, the applicable form is the Fannie Mae Form 2000/Freddie Mac Form 1032.

For a 2-, 3-, or 4-unit income-producing residential property, the applicable form is the

---

[86] Complete guidance is contained in Chapter 44 of the Freddie Mac *Single-Family Seller/Servicer Guide*. *See also* Freddie Mac, *Reviewing Appraisals in Today's Mortgage Market*, http://www.freddiemac.com/singlefamily/uw/docs/PLNAQ_series_Reviewing_Appraisals_in_Todays_Mtg_Mkt_Fact_Sheet_838.pdf (last visited June 20, 2013).

[87] Freddie Mac *Single-Family Seller/Servicer Guide*, Chapter 44.6.

Fannie Mae Form 2000A/Freddie Mac Form 1072. Both of these forms utilize a

"yes/no" question format similar to the format of the 31 questions I utilize in the CAM.

> iii.   Appraisal Literature Regarding Credibility

In addition to government requirements, appraisal literature also establishes the

industry standard for performance of a credible appraisal.[88] The Appraisal Foundation,

which is the parent organization of the ASB that publishes USPAP, provides guidance to

homebuyers in their *Guide to Understanding a Residential Appraisal*. Addressing the

question, "what elements should a credible appraisal include," the Appraisal Foundation

states that an appraisal must contain the following:

- a clear, accurate description of the subject property;

- sales that are the most recent and most comparable;

- comments that explain important issues in the appraisal; and

- an opinion of value supported by the analysis of the comparable sales.[89]

---

[88]   For instance, a foundational text for core Appraisal Principles courses is *The Appraisal of Real Estate*, which was in its 12th edition at the time of the original appraisals for the sample Nomura properties. Chapter 27 discusses the appraisal review process, which it notes is performed to "determine[] the reliability of the value conclusions and the adequacy of the supporting evidence provided." *The Appraisal of Real Estate*, at 635 (12th ed., 2001).

[89]   The Appraisal Foundation, *A Guide to Understanding a Residential Appraisal*, at 13; *see also* Francisco Rosillo, *Determination of Value* at 11 (Wiley, 2013). Rosillo presents a useful parallel in the business appraisal context, identifying the following attributes of a credible appraisal: replication, relevance, reliability, reasonable tests, generally accepted methods and procedures, transparency, adequate disclosures, non-advocacy, and completeness. *Id.* Coleman offers a similar list for land valuation in the environmental contamination context: comparing apples/oranges, by not using dissimilar comparable properties; carelessness or inconsistencies in report (including describing a market as trending in one direction but data in valuation section trends in another); redundancy and information overload; leaps of faith, by use of unsupported or questionable assumptions; unexpected limiting conditions, sometimes used to limit liability; selection of key assumptions at the extreme margins of range; questionable or

Likewise, Roger Tibble, in an article for the American Bar Association, urges that an appraisal consider the following questions:

- Has the appraiser appropriately analyzed the property's general and immediate market by identifying and analyzing those market factors and trends that impact market demand for the property and its market?

- Has the appraiser correctly quantified the subject property, both its land parcel and improvements?

- Has the appraiser properly analyzed the property's highest and best use, as vacant and as improved?

- Has the appraiser selected the appropriate approaches to a value indication, cost approach[90] [see Section 4.D], sales comparison approach, and income approach; and correctly used them?

- Are the appraiser's comparables cited in the sales comparison approach truly comparable and were they properly analyzed and adjusted for differences when compared to the appraised property?

- In reconciling the value indications from the approaches to value that were used, did the appraiser communicate why one approach was relied on more than another or why one comparable was a better indication of value for the appraised property than another?

---

suspect data; and failure to apply a test of reasonableness before finalizing the value. Stephanie Coleman, *Michigan Department of Natural Resources Appraisal Review Process Reference Manual* (2011).

[90]   The cost approach is "[o]ne of the approaches to value commonly applied in Market Value estimates and many other valuation situations. A comparative approach to the value of property or another asset that considers, as a substitute for the purchase of a given property, the possibility of constructing another property that is an equivalent to the original or one that could furnish equal utility with no undue cost resulting from delay. The Valuer's estimate is based on the reproduction or replacement cost of the subject property or asset, less total (accrued) depreciation. The cost approach establishes the value of a real property by estimating the cost of acquiring land and building a new property with equal utility or adapting an old property to the same use with no undue cost due to delay. An estimate of entrepreneurial incentive or developer's profit/loss is commonly added to land and construction costs. For older properties, the cost approach develops an estimate of depreciation including items of physical deterioration and functional obsolescence." Appraisal Inst., *The Dictionary of Real Estate Appraisal* (5th ed. 2010), at 244.

- Does [sic] the appraisal and appraisal report meet the *Uniform Standards of Professional Appraisal Practice* as published by the Appraisal Standards Board of The Appraisal Foundation (USPAP) and thus include a separate, signed certification to that effect?[91]

In sum, appraisers are trained, mentored, and experienced in the conduct of residential mortgage appraisals and are expected to adhere to these standards as they certify to when preparing an appraisal.

C.   Appraisal Standards Governing My Engagement

My work on this assignment consists of performing appraisal reviews.[92] An appraisal review is "a process whereby a review appraiser is employed as an independent professional to pass judgment on certain specific elements in another's appraisal report."[93] As such, I am bound as a certified appraiser to comply with the currently effective USPAP requirements governing appraisal review (*i.e.*, USPAP 2014-2015).

USPAP Standard 3 directs my appraisal reviews in this report. USPAP emphasizes that an "appraisal review encompasses more than just the review of another's appraisal. It is *the act or process of developing and communicating an opinion about the quality of another appraiser's work*."[94] Standard 3 directs that

> in developing an appraisal review assignment, an appraiser acting as a reviewer must identify the problem to be solved, determine the scope of

---

[91]   Roger F. Tibble, *The Appraisal: What's It Worth? Is It Credible? Is it Accurate?*, 32/4 Family Advocate 16–18 (2010).

[92]   As discussed in my companion report concerning the accuracy of the Nomura Appraisals, my work may also be termed a "mass appraisal." The professional standards governing "mass appraisal" are discussed therein and incorporated fully by reference here. *See* Expert Report of John A. Kilpatrick, Ph.D. Concerning Accuracy of Appraisals, Section 4.B; *see also* USPAP 2014-2015 Standard 6.

[93]   Jack P. Friedman & Nicolas Ordway, *Appraisal Review in a Litigation Support Role*, *reprinted from* 68 Appraisal J. 1, 2 (2000).

[94]   *Id*. at F-145 (emphasis in original).

work necessary to solve the problem, and correctly complete research and analysis necessary to produce a credible appraisal review.[95]

Standards Rule 3-4 further provides that the appraisal reviewer must:

> (a) clearly and accurately set forth the appraisal review in a manner that will not be misleading; (b) contain sufficient information to enable the intended users of the appraisal review to understand the report properly; and (c) clearly and accurately disclose all assumptions, extraordinary assumptions, and hypothetical conditions used in the assignment.[96]

My work on this matter conforms with these standards.

The guidance of Standard 3 provides for the qualitative nature of the review and requires that the reviewer express an opinion about the credibility of the appraisal analysis. More specifically:

> Consistent with the reviewer's scope of work, the reviewer is required to develop an opinion as to the completeness, accuracy, adequacy, relevance, and reasonableness of the analysis in the work under review, given law, regulations, or intended user requirements applicable to the work under review.[97]

Standards Rule 3-3 specifically spells out only an outline of the process for determining credibility, in Standards Rule 3-3(a):

> In developing an appraisal review, a reviewer must apply the appraisal review methods and techniques that are necessary for credible assignment results.
>
> (a)   When necessary for credible assignment results in the review of analyses, opinions, and conclusions, the reviewer must:
>
>> (i)   Develop an opinion as to whether the analyses are appropriate within the context of the requirements applicable to that work;

---

[95]   USPAP 2014-2015, at U-30.

[96]   *Id*. at U-31.

[97]   Comment to USPAP S.R. 3-3(a).

(ii)   Develop an opinion as to whether the opinions and conclusions are credible within the context of the requirements applicable to that work; and

(iii)   Develop the reasons for any disagreement.

In the next section, I discuss the relevant literature and other considerations that have informed my judgment for establishing these benchmarks and evaluation criteria considered by the Greenfield CAM.

The Credibility Assessment Model

4.   The Credibility Assessment Model

This section addresses the methodology utilized by the Credibility Assessment

Model ("CAM"). I begin with an overview of how the Greenfield CAM retrospectively

evaluates the credibility of an appraisal, consistent with established and agreed appraisal

standards and practice. Following this overview, I set forth the 31 questions I used to

evaluate the credibility of the Nomura Appraisals and explain the weightings the CAM

assigned to these questions.

A.   Overview of the Credibility Assessment Model

Each of the 31 credibility assessment questions used by the CAM was derived

directly from USPAP and other professional guidance applicable to residential appraisal

at the time the overstated Nomura Appraisals were prepared. These questions represent

the standards and review processes that would be followed by any competent appraisal

reviewer conducting a review under USPAP Standard 3.[98] The CAM applies a score to

each of these questions that is answered in the negative (*i.e.,* indicating that an appraisal

process was not properly followed).[99] The score applied to the credibility assessment

question by the CAM is a function of the degree to which the negative answer to the

question implicates deviations from appraisal standards, guidance, and practice. The

score applied to each credibility assessment question by the CAM is thus a function of

---

[98]   *See* specifically USPAP S.R. 3-3(a)(ii): "…the reviewer must develop an
opinion as to whether the opinions and conclusions are credible within the context of the
requirements applicable to that work."

[99]   Data elements are used to provide a "Yes" or "No" answer for each question.
"Yes" answers are coded as "0" and "No" answers are coded as "1." As an example,
whether external obsolescence is reported accurately takes a "Yes/No" answer on page 7
of the R code found in Appendix 4-1 and converts a "No" answer into a 1 (page 8). *See*
Appendix 4-1, Greenfield Credibility Assessment Model (CAM) Source Code.

the combined scores of the various weighted deviations or discrepancies implicated by

that credibility assessment question. Through this scoring process, the CAM provides a

systematic, consistent, and reliable methodology to assess the credibility of numerous

appraisals.

As I set forth in Section 5, based on my evaluation and analysis of the scores that

the CAM produced for central, critical credibility assessment questions I established the

threshold beyond which, in my opinion, no reasonable appraiser adhering to appraisal

standards applicable at the time could believe the appraisal credible. Consistent with

USPAP's directive that an appraiser must neither make an individually egregious error

nor make a series of minor errors that have the same impact as a single egregious error,

the scoring methodology utilized by the CAM evaluates the effect on credibility of

individual, egregious discrepancies as well as combinations of individually minor

discrepancies.[100]

B.   The 31 Credibility Assessment Questions

Credibility is the keystone of a valid appraisal.[101] USPAP and other source

documents and literature in the appraisal industry codify the criteria for assessing an

appraisal's credibility. I have formulated those criteria into a series of 31 credibility

assessment questions that I use to review the overstated Nomura Appraisals. These

questions evaluate whether the original appraisals for the Nomura properties comply with

---

[100]   *Compare* USPAP S.R. 1-1(b) (major) *with* USPAP S.R. 1-1(c) (minor); *see also* the 2014-2015 USPAP Scope of Work Rule, and particularly lines 429–440.

[101]   "Credible" in the appraisal context is a term of art that denotes the appraisal was done independently, objectively, and in compliance with applicable rules. Credible is defined as "Worthy of belief. Credible assignment results require support, by relevant evidence and logic, to the degree necessary for the intended use. USPAP, 2010-2011 ed." Appraisal Inst., *The Dictionary of Real Estate Appraisal* (5th ed. 2010), at 49.

Confidential   The Credibility Assessment Model

the tenets of appraisal standards and practice that a reasonable appraiser would have

recognized and adhered to at the time. The data collected by my staff and the third-party

appraisal researchers concerning the Nomura Appraisals form the basis of the answers for

these 31 questions.

The 31 credibility assessment questions I utilized are set forth in Table 4-1.

Table 4-1. Greenfield CAM Assessment Questions

Number	Credibility Assessment Questions
1	Are the legal address and parcel ID *sufficient* to identify the subject?
2	Did the appraiser report an *accurate* listing history for the subject?
3	If there was a prior subject listing, was appraised value *lower* than listing price?
4	*Was the appraised value of the subject less than or equal to **10% higher** than the most recent listing within the last year?*
5	If the appraisal was for a purchase, did the appraiser *report* receipt of sales contract?
6	If appraiser reported a sales contract, did the appraiser *analyze* it?
7	Did the appraiser report supply/demand *correctly*?
8	Did the appraiser report property value trend *correctly*?
9	Did the appraiser report marketing time *correctly*?
10	Is the subject site description *correct*?
11	Did the appraiser report the sales history *correctly?*
12	Did the appraiser *analyze* all prior sales of the subject and comparables?
13	On an annualized basis, was the appraised value of the subject less than *10%* higher than the prior *sales price* of the subject?
14	Is the land value ratio *greater than 20% and less than 30%*?
15	Did the appraiser *use* the cost approach for non-condominium properties?
16	Did the appraiser calculate the physical depreciation *correctly*?
17	Did the appraiser report external obsolescence *correctly*?
18	Did the appraiser confirm a broker/builder source for comparables *using a disinterested third-party source*?
19	For condominiums, was at least one of the comparables *outside of the subject's condominium project*?
20	Did the appraiser *correctly* report comparable sale transaction data?
21	If a previous sale of a comparable exists, is the current unadjusted price of that comparable less than *10%* higher than the prior sale price on an annualized basis?
22	Is the appraised value of the subject *within the range* of the unadjusted comparable sales prices?
23	Is the appraised value of the subject *within the range* of the adjusted comparable sales prices?
24	If income approach, do the *mix of units for the comps match* the mix of units for the subject?
25	If income approach, does the gross rent multiplier *("GRM") used fall within the range* of unadjusted GRMs for first 3 comps in the appraisal report?
26	*If income approach is used, do the **market rent estimates for each unit mix fall within the range** of rents reported for each unit mix for the first three comps?*
27	Did the appraiser use the *most recent* comps available?
28	Did the appraiser use the *nearest* comps available?

The Credibility Assessment Model

Number	Credibility Assessment Questions
29	Was the ***average price per square foot*** ("PPSF") of the comps in the appraisal report less than or equal to the average PPSF of the comps available in the market at the time of the appraisal?
30	Was the ***average site square footage*** ("SSF") of the comps used in the appraisal report less than or equal to the average SSF of the comps available in the market at the time of the appraisal?
31	Was the ***average gross living area*** ("GLA") of the comps used in the appraisal report less than or equal to the average GLA of the comps available in the market at the time of the appraisal?

Each of these questions touches on different aspects of what makes an appraisal credible and does so to different degrees. The CAM assigns scores to each credibility assessment question answered in the negative by evaluating how the deviations and deficiencies associated with the question affect the credibility of an appraisal.

To assign appropriate, relative scoring weights to these questions, I divided appraisal standards and practice into five general aspects: Reasonable Appraiser Standard, Impact on Value, Appraisal Process, Appraisal Report Topics, and Magnitude of Impact on Value. Based on my experience and judgment, and consistent with USPAP and appraisal guidance and practice, I have ranked and weighted these five aspects in the CAM in the order of their relative importance to the evaluation of whether or not an appraisal is credible. Table 4-2 sets forth this ranking and weighting:

Table 4-2. Aspect Weights

Aspect	Aspect Weight
Reasonable Appraiser Standard	5
Impact on Value	4
Appraisal Process	3
Appraisal Report Topics	2
Magnitude of Impact on Value	1

Within each of these five general aspects, there are up to eight categories of proper appraisal practice that pertain to one or more of the 31 questions. Each of the 31 credibility questions used to evaluate the Nomura appraisals affects at least one category

within each aspect.[102] Table 4-3 sets forth the categories for each of the five general

aspects and is followed by a discussion of each aspect and category. For coherency, the

categories within each credibility aspect collectively total to 100% of that aspect's total

impact. However, as is set forth, the weighting of each category varies according to its

differential impact on the credibility of an appraisal.

Table 4-3. Categories within Aspects

Aspect	*Categories*
Reasonable Appraiser Standard	Accuracy
(Aspect Weight 5)	Completeness
	Objectivity
	Trustworthiness
Impact on Value	Direct
(Aspect Weight 4)	Indirect
	Supportive
The Appraisal Process	Definition of Problem
(Aspect Weight 3)	Scope of Work
	Data Collection & Property Description
	Data Analysis
	Land Value Opinion
	Apply Approaches
	Value Reconciliation
	Report Value
Appraisal Report Topics	Property
(Aspect Weight 2)	Transaction
	Approach
	Market
	Comps
Magnitude of Impact on Value	High
(Aspect Weight 1)	Modest
	Nominal

---

[102] Although the questions probe multiple aspects of credibility, each underlying aspect or category is unique.

        i.   Reasonable Appraiser Standard

The highest weighted appraisal aspect is that of the Reasonable Appraiser

Standard. This aspect consists of qualitative categories of performance well-defined in

the appraisal literature and industry standards: accuracy, completeness, objectivity, and

trustworthiness. A significant flaw in any one of these, in and of itself, would contribute

significantly to rendering an appraisal non-credible. Thus, to evaluate whether a

reasonable appraiser adhering to USPAP and reasonable appraisal practices could have

believed the appraisal at the time, I began by assessing the characteristics of a reasonable

appraiser and how they are manifested in practice.[103]

Because adherence to the Reasonable Appraiser Standard is key to the credibility

of an appraisal, this aspect is heavily weighted and contributes significantly to the scores

for each of the 31 credibility questions. Relative to the other aspects, the Reasonable

Appraiser Standard is highly important because it goes to the heart of the public trust

mandate under USPAP. To quote from the Preamble to the 2014-2015 Edition of

USPAP:

> The purpose of the Uniform Standards of Professional Appraisal Practice
> (USPAP) is to promote and maintain a high level of public trust in
> appraisal practice by establishing requirements for appraisers.   It is
> essential that appraisers develop and communicate their analyses, opinions,

---

[103] *See*, *e.g.*, *Kokanee Mortgage MIC Ltd. v. Concord Appraisals Ltd.*, 2000
BCSC 1197 (B.C.J. Aug. 4, 2000) ("a reasonable appraiser should do two things:
…obtain as much information as possible to adequately inform himself about the
comparables available... [and] alert his reader to the possibility that his appraisal was less
reliable because of the absence of appropriate comparables.") (as cited in Sevelka, *supra*
note 68, at 340). The concept of reasonableness is also addressed by the American
Society of Farm Managers and Rural Appraisers, one of the original and still current
sponsors of the Appraisal Foundation, in their white paper, *Preparation of Technical
Appraisal Review Reports* (2012).

and conclusions to intended users of their services in a manner that is meaningful and not misleading.[104]

The Ethics Rule of USPAP continues in this theme: "An appraiser must perform assignments with impartiality, objectivity, and independence, and without accommodation of personal interests."[105]

According to The Appraisal Foundation, the main purposes of USPAP are to protect the public and promote the public trust. Continuing in this theme, the Foundation notes that USPAP provides details on what an appraiser must consider in order to be independent, impartial, and objective, and thus arrive at a credible opinion of value.[106]

Beyond the specific standards articulated in USPAP, there exists a presumption that the appraiser shall adhere to a reasonableness standard in performing the real estate appraisal function to produce appraisal reports.[107] The concept of the "reasonable appraiser" incorporates both professionalism and ethics.[108] At its core, the Reasonable Appraiser Standard aspect focuses on criteria that ensure that the appraisal report is not

---

[104]   USPAP 2014-2015, lines 148–151.

[105]   *Id.* at lines 229–230. Note that while this language comes from the current edition of USPAP, these themes have prevailed in USPAP since its inception. *See, e.g.*, USPAP 2003, lines 260–261 (same); USPAP 2005, lines 251–252 (same).

[106]   The Appraisal Foundation, *Appraisers, Appraisals, and You: A Lender's Guide to USPAP*, at 3 (undated).

[107]   Sevelka, *supra* note 68.

[108]   Bruce M. Closser, The Evolution of Appraiser Ethics and Standards, 75 *Appraisal* J., 116–129 (Spring 2007); William P. Pardue, Jr., *Professional Appraisal Liability and Responsibility*, 55 Appraisal J., 32–41 (January 1987); Allan Beatty, *Reasonable Limits for Canadian Residential Appraisers*, Canadian Appraiser, 18–19 (Spring 2003).

Confidential   The Credibility Assessment Model

misleading.[109] Standards that are not specific to USPAP prescriptions embrace this

concept of the "reasonable appraiser."[110] The concept of reasonable appraiser behavior

also appears in the standards of the Counselors of Real Estate[111] and the CFA Institute.[112]

The weights I assigned to each of these categories sum to 100% (1.000) of the

aspect's total impact as follows:

Table 4-4. Reasonable Appraiser Standard Weightings

Reasonable Appraiser Standard Categories	Contributory Weight
Accuracy	0.400
Completeness	0.200
Objectivity	0.200
Trustworthiness	0.200

Accuracy. This category of the Reasonable Appraiser Standard aspect of the

analysis examines those areas of the appraisal analysis and report that contribute to

accuracy directly.[113] Not surprisingly, many of the 31 assessment questions (24 out of

31) are linked directly to accuracy.[114]

---

[109] *See*, *e.g.*, USPAP 2005, Standard 2 ("In reporting the results of a real property appraisal, an appraiser must communicate each analysis opinion, and conclusion in a manner that is not misleading.").

[110] David Babineau, *Are You a 'Reasonable Appraiser'?*, Canadian Property Valuation, 22–25 (January 2013); Elliott W. Weinstein & Martin A. Skolnik, *The Need for Appraisal Company Standards*, 65 Appraisal J., 275–278 (July 1997).

[111] CRE: The Counselors of Real Estate, Membership: Ethics & Standards, www.cre.org/aboutmembership/ethics.cfm (last visited Oct. 23, 2013).

[112] CFA Institute, Code of Ethics & Standards of Professional Conduct, www.cfapubs.org/doi/pdf/10.2469/ccb.v2010.n14.1 (last visited Oct. 23, 2013).

[113] To cite HUD's guidance on the subject, "Accurate and thorough appraisal reporting is critical to the accuracy of underwriting…" HUD Handbook 4150.2, *Reporting the Appraisal*, 5-0.

[114] It should be understood that I am referring here to the accuracy of the components of appraisals, rather than the accuracy of the appraised values, which were evaluated using the AVM and are the subject of a separate report. The CAM treats the

Confidential   The Credibility Assessment Model

For example, an inaccurate listing history (question 2) will lead inexorably to a failure by the appraiser to recognize whether a determination of value is unreasonable, given current market trends, supply/demand factors, and other characteristics. Indeed, these factors alone should allow the appraiser to arrive at a highly accurate "check figure" against which to measure the results of the sales comparison or cost approaches to value.

Within the aspect of Reasonable Appraiser Standards, the characteristic of accuracy carries the most weight (40% or 0.400), as it represents the critical question within the FHLMC/FNMA review process. Recognizing the importance of accuracy to the credibility of the appraisal report and final opinion of value, standard FHLMC/FNMA review appraisal forms expressly require the appraisal reviewer to express an opinion as to the accuracy of the appraisal findings.[115] As such, this category is weighted twice as much as the other three categories within this aspect.

Completeness. As discussed above, the principal thrust of USPAP Standard 2 is to ensure that the report is not misleading. To not be misleading, an appraisal report must be complete in its findings and neither misrepresent nor omit any relevant conclusions. Questions 1 through 5, 8, and 9 on the FNMA/FHLMC single-family appraisal review form calls for a determination of whether or not the information is "complete and accurate."[116]

The report may be accurate, but if it is not complete, it may mislead readers and other intended users. For example, Standards Rule 2-1 requires that:

---

credibility of an appraisal's conclusion as to the value of a property as a function of (among other things) the accuracy of the other elements of the appraisal.

[115]   *See, e.g.*, FNMA Forms 2000 and 2000A and FHLMC Forms 1032 and 1072.

[116]   Freddie Mac Form 1032/Fannie Mae Form 2000.

Each written or oral appraisal report must: (a) Clearly and accurately set forth the appraisal in a manner that will not be misleading; (b) Contain sufficient information to enable the intended users of the appraisal to understand the report properly; and (c) Clearly and accurately disclose all assumptions, extraordinary assumptions, hypothetical conditions, and limiting conditions used in the assignment.

The remainder of USPAP Standard 2 outlines minimum requirements aimed at completeness in the reporting process. For example, if the appraiser failed to analyze prior sales of the subject or the comparables (question 12), the user would be unable to assess fully the changes in market conditions over time. This deficiency would lead to the appraiser failing to recognize (and thus reporting) an incorrect value conclusion, and hence would lead to a misleading report. An incomplete appraisal analysis and report would lead the appraiser to fail to consider relevant and pertinent information; would prevent a reviewer, client, or other user from replicating or understanding the appraiser's work and findings; and would thus lead to a misleading report of the appraisal process and findings. This category is weighted equally with objectivity and trustworthiness (20% each), albeit half as much as accuracy, which, as previously discussed, is the most critical component of the reasonable appraiser aspect, because accuracy is specifically singled out as the critical component in the FNMA/FHLMC review processes.

Objectivity. The conduct portion of the USPAP Ethics Rule requires that "[a]n appraiser must perform assignments with impartiality, objectivity, and independence."[117] A lack of objectivity might include bias, advocacy, the reporting of predetermined

---

[117]   USPAP 2005 Ethics Rule, lines 251–252.

opinions and conclusions, communicating the results with intent to mislead or defraud, and performing an assignment in a grossly negligent manner.[118]

An appraiser's failure to perform an objective appraisal would, by itself, be a significant consideration for rendering an appraisal analysis and report less than credible. Lack of objectivity leads to bias in the analysis and results, and evidence of such lack of objectivity is not only an explicit violation of both the letter and spirit of USPAP, it would also lead a reviewer, client, or other user to question the results of the appraisal.

Examples of the results of lack of objectivity, as outlined in the Ethics Rule, include the following:

- Bias

- Advocacy

- The reporting of predetermined opinions and conclusions

- Communicating the results with the intent to mislead or defraud

- Performing an assignment in a grossly negligent manner

USPAP notes that this last point ties directly back to USPAP Standard 1. Examples of CAM questions that examine the objectivity of the appraiser include the following:

- Did the appraiser report an accurate listing history for the subject? (question 2)[119]

- Was the appraised value of the subject less than or equal to 10% higher than the most recent listing within the last year? (question 4)

- Did the appraiser use the cost approach for non-condominium properties? (question 15)[120]

---

[118]   *Id.* at lines 259–261.

[119]   Inaccurate listing history is frequently tied to an appraiser attempting to report only those factors which are favorable to the client interests, and hence an example of potential lack of objectivity.

Confidential   The Credibility Assessment Model

- Did the appraiser confirm a broker/builder source for comparables using a disinterested third-party source? (question 18)

- For condominiums, was at least one of the comparables outside of the subject's condominium project? (question 19)

Objectivity is weighted equally with trustworthiness and completeness (20%),

albeit half the weighting of accuracy, which, as previously discussed, is the most critical

component of the reasonable appraiser aspect, because accuracy ties directly back to the

FNMA/FHLMC review processes.

Trustworthiness. Appraisal standards focus distinct attention on the

trustworthiness of how a reasonable appraiser should perform his duties. Indeed, the

opening sentence of the Ethics Rule states that:

> To promote and preserve the public trust inherent in professional appraisal
> practice, an appraiser must observe the highest standards of professional
> ethics.[121]

Failure to report items in a trustworthy manner not only calls into question the

credibility of the analysis, but also undermines the public faith in appraisals. Evidence of

---

[120]   Throughout the relevant period for my review the cost approach was not required of FNMA/FHLMC, and thus not necessarily applicable for a complete appraisal. However, USPAP 2005 (and other versions) establish in the Departure Rule that, "The burden of proof is on the appraiser to decide before accepting an assignment and invoking this Rule that the scope of work applied will result in opinions or conclusions that are credible. The burden of disclosure is also on the appraiser to report any departures from specific requirements." (USPAP 2005, lines 400–403). USPAP 2005 Statement 7 is even more demonstrative, noting that the cost approach may not be necessary for credible results, but that the resulting appraisal would be limited (Departure Provision invoked) and such a departure would need to be discussed by the appraiser. (USPAP 2005, lines 3324–3329). In my review of individual appraisal reports in this case, I have not found one with an explanation for the absence of a cost approach that would satisfy USPAP's requirements. Nonetheless, in an abundance of caution, as set forth below, I ran a sensitivity analysis to examine the impact of this question on the CAM scoring.

[121]   USPAP 2005, lines 228–29.

lack of trustworthiness goes to the heart of the purpose for USPAP, as noted in the

Preamble and the Ethics Rule.[122]

Examples of such untrustworthy analytical actions include the following:

- Rendering an appraised value that was higher than the listing price (question 3)

- Reporting a land value outside of normal ratios without explanation (question 14)

- Incorrect report of comparable sales transaction data (question 20)

- Failure to support market rent estimates (question 26)

Trustworthiness is weighted equally with objectivity and completeness (20%),

and has half the weight of accuracy, which, as previously discussed, is the most critical

component of the reasonable appraiser aspect, because accuracy ties directly back to the

FNMA/FHLMC review processes.

Most of the credibility assessment questions implicate two of the reasonable

appraiser categories, which recognizes that individual flaws in an appraisal often

evidence lack of reasonable actions by the appraiser in more than one way.

ii.   Impact on Value

Next in weight among the aspects is the Impact on Value. This aspect of

credibility recognizes that portions of the appraisal that have a more significant

connection to the final value opinion are more closely tied to the ultimate use of the

appraisal and how its credibility is assessed.[123] In contrast, portions of the original

---

[122]   USPAP 2005, Preamble, lines 179–182; *see also* Conduct provisions of the Ethics Rule, lines 249–268. Trustworthiness thus relates to, as explicated in the below example questions, the appraiser inadvertently or intentionally providing faulty work product, or due to bias.

[123]   *See, e.g.*, Freddie Mac, *Reviewing Appraisals in Today's Mortgage Market*, *supra* note 86, at 1.

The Credibility Assessment Model

appraisal that only indirectly affect the value opinion, or support the formulation of the

value opinion, are of lesser importance. The Impact on Value aspect is significant in the

CAM model because it reflects an inference of unreliability. As previously noted,

reliability is an important touchstone; it is the key point of investigation in

FNMA/FHLMC appraisal review processes.

The Impact on Value aspect comprises three categories: direct impact, indirect

impact, and supportive. The weights I assigned to these three categories (totaling 100%

or 1.000) are as follows:

Table 4-5. Impact on Value Category Weightings

Impact on Value Categories	*Contributory Weight*
Direct	0.750
Indirect	0.200
Supportive	0.050

Direct impact means that violation of this category will directly lead to an

inaccuracy in the appraisal results, such as comparable adjustments or income factor

determination (*e.g.*, market rents or gross rent multiplier). Indirect impact may be

thought of as a second-order effect; it means that a violation will affect a component of

the appraisal process that aids in determining those questions that are direct. For example,

market analyses aid the appraiser in determining comps, and determination of the wrong

comps would have a direct impact on value. Hence, market analyses errors have an

indirect impact on value. Supportive impact means that the violation may lead to third-

order errors. For example, a failure to properly confirm comparables with a disinterested

third party may lead to the appraiser unwittingly using false information for one or more

of the comparables, which may lead to incorrect inputs if not confirmed through other

processes (*e.g.*, alternative comps, alternative approaches).

Confidential   The Credibility Assessment Model

Direct. An example of an evaluation question that has a direct impact on the

appraised value of a subject property is assessment question 3, which deals with the

relationship between the listing price and the market value of the subject property. Since

market value results from a meeting of the minds between a seller (who lists the property

for sale) and a buyer (who makes an offer on the property), the most probable price will

be somewhere between that high "ask" and the somewhat lower "bid." A value

determination above the "ask," without explanation, would not only be incongruous, it

would also have a direct impact on the determination of value, and hence the credibility

of the assignment. Direct impacts are those that can change the final determination of

value, and, therefore, are assigned 75% (0.750) of the weight within the impact aspect,

which in turn is the second highest of the five aspects of the review analysis.

Indirect. The initial phase of any credible appraisal analysis includes certain steps

that set the stage for selection of comparable data and determining appropriate

adjustments. Such steps include, but are not limited to, such items as correct analysis and

reporting of supply and demand (question 7), correct analysis and reporting of property

value trends (question 8), and correct analysis and reporting of sales history (question 11).

These steps have an indirect but material impact on the value determination and hence

credibility of the results. Within the aspect of Impact on Value, these indirect impacts

carry 20% of the weight.

Other examples of criteria that have an indirect impact on value include failure to

analyze prior sales of the subject (question 12) and using incorrect comparable sales

transaction data (question 20). While such errors are important, they do not directly

change the final determination of value in the same way a direct impact error does.

Questions in this category examine the process of gathering and assessing data, which are the sources of inputs to the calculations themselves (income, sales adjustment, and cost). Errors will not directly affect the calculations themselves, but will lead to false data being used as support for those calculations. Note that the calculations themselves may still be correct as a consequence of analyses of other information, but the ability of the user of the appraisal to depend on the analysis as being credible via the use of correct data is compromised.

Supportive. Certain steps in the appraisal analysis set the stage for application of adjustments. Unlike those that have a direct or indirect effect on value, these criteria may not determine the actual selection of comparables or calculation of adjustments (*e.g.,* price per square foot of gross living area) but may influence the application of those adjustments. For example, the incorrect reporting of the site description (question 10) may determine the degree to which a site area adjustment is made. These supportive impacts carry 5% of the weight within the Impact on Value aspect as data being used to support the calculations may be corrected through other sources, but nonetheless will be potentially influenced by errors, particularly a cumulative series of errors, in this category.

iii.   Appraisal Process

The Appraisal Process aspect is ranked third among the five aspects. These are steps in the appraisal process derived directly from principles of appraisal training, and the categories of this aspect are taken directly from the 12th edition of *The Appraisal of Real Estate*, which was applicable at the time the Nomura Appraisals were performed.[124]

---

[124]   *The Appraisal of Real Estate* at 49 (12th ed., 2001).

Confidential   The Credibility Assessment Model

Residential appraisals follow from a normal process to which appraisers must adhere.[125]

The Appraisal Process ensures that data is gathered, analyzed, and reported in a well-

developed and well-established process, so that users of the appraisal services will not

find the results to be misleading and will find those results to be credible.[126]

The Appraisal Process aspect is important, but of lesser importance than the

Reasonable Appraiser Standard and the Impact on Value aspects, because Appraisal

Process violations, particularly a series of violations, call into question the user's

confidence in the results even if the mathematical results of the process actually turn out

to be reasonably accurate. Given that these processes are well developed and accepted by

the appraisal profession, adherence to these processes aids in ensuring that the final

results of the appraisal process meet the expectations of users of the appraisal services.

Here, the mathematical results (the accuracy of the values in the Nomura Appraisals)

have already been determined to be objectively false (*i.e.*, inflated). Accordingly, this

aspect focuses on how the appraisers made the mistakes that led to an unreliable set of

results.

The Appraisal Process aspect comprises eight equally weighted categories:

Definition of the Problem, Scope of Work, Data Collection & Property Description, Data

Analysis, Land Value Opinion, Apply Approaches, Value Reconciliation, and Report

Value. Each of these categories is weighted equally (12.5% each). These categories

comprise a process chain, in which each link in that chain is equally important to the

---

[125]   *See, e.g.*, Freddie Mac *Single-Family Seller/Servicer Guide* Chapter 44.

[126]   "Not misleading" is the key element of USPAP Standard 2.

overall aspect. As such, no individual link in the chain is weighted higher than any other.

I discuss the implications of each of these categories below.

Table 4-6. Appraisal Process Category Weightings

Appraisal Process Categories	Contributory Weight
Definition of Problem	0.125
Scope of Work	0.125
Data Collection & Property Description	0.125
Data Analysis	0.125
Land Value Opinion	0.125
Apply Approaches	0.125
Value Reconciliation	0.125
Report Value	0.125

Definition of Problem. For a residential appraisal assignment, the definition of

the problem may seem simple and straightforward. However, this is the step in the

appraisal process in which the appraiser gathers the most fundamental data, such as

subject description, sales history, and site description, and sets the stage for the remainder

of the appraisal analysis and report. This step is also the point in the assignment when

the appraiser determines if he or she has the requisite market experience and familiarity

to complete the assignment. To quote from the opening paragraph of the Competency

Rule:

> Prior to accepting an assignment or entering into an agreement to perform
> any assignment, an appraiser must properly identify the problem to be
> addressed and have the knowledge and experience to complete the
> assignment competently.[127]

Questions that examine this category include whether or not the appraiser was

able to properly determine the subject site description (question 10), whether the

appraiser reported an inaccurate listing history (question 2), and whether the appraiser

reported the sales history incorrectly (question 11).

---

[127]   USPAP 2005, lines 357–59.

Scope of Work. At the time the Nomura Appraisals were performed, the development of the scope of work and the reporting of it were encompassed by USPAP Standards 1 and 2. Subsequently, in the 2006 and later editions of USPAP, Scope of Work was separated into a distinct rule. Examples of a failure to apply the proper scope of work include the failure to report the receipt of the sales contract, if a purchase appraisal (question 5), failure to analyze such contract (question 6), and failure to use the cost approach for non-condominium properties (question 15) are all examples of a failure to apply a proper scope of work. Scope of work development is the beginning of the appraisal process and sets the stage for all data gathering, analysis, and reporting. Errors in the scope of work development can be analogized to errors in the structural planning of a building, and as such, evidence of such errors would lead to a user of the appraisal services having little (or, perhaps, no) confidence in the processes and reports that follow.

Data Collection and Property Description. The scope of work sets the stage for these two intertwined processes. A correct property description (including physical, legal, and economic aspects) leads to the determination of data to be collected. Errors in either of these processes will lead to incurable flaws in the appraisal. Examples of such errors include failure to analyze all prior sales of the subject and comparables (question 12), failure to use comps nearest to the subject (question 28), and failure to use comps with an appropriate average site square footage (question 30). Any of these property description and data collection errors would lead to incorrect data usage, analysis, and calculations.

Data Analysis. This category is at the core of the appraisal process, and it links the data collected with the final appraisal results. Generally, these questions concern methodological defects and/or inappropriate (or lack of appropriate) mathematical

calculations, which imply incorrect results from the data gathered. Examples include

determining a value that is more than 10% higher than the prior listing within the past

year (question 4), failure to report supply and demand correctly (question 7), and

concluding a value outside of the range of either unadjusted (question 22) or adjusted

(question 23) comparables. Data analysis deficiencies lead to appraisal results that are

simply not believable, since the appropriate, time-tested processes were not followed.

Land Value Opinion. The land value opinion concerns both the sales comparison

approach (site adjustments) and the cost approach (site value). Failures in this step of the

appraisal process will result in both incorrect adjustments as well as an incorrect baseline

for the land value used in the cost approach. Further, an incorrect calculation of land

value opinion may lead the user of the report to conclude either a very high level of

obsolescence (in the case of an artificially high land value) or overbuilding for the

neighborhood and hence lack of marketability (for a very low land value). Examples of

such violations include a land value outside of the normally expected range of 20% to

30% of overall value (question 14) or using comps that do not represent the most

applicable site size among those available in the market (question 30) without analysis or

explanation.

Question 14 is rooted in the Fannie Mae Selling Guidelines (1994), which say that:

Because we do not purchase or securitize mortgages secured by
agricultural-type properties, undeveloped land, or land-development type
properties, the lender must review carefully the appraisal report for
properties that have sites larger than those typical for residential properties
in the area. Special attention must be given to the appraiser's description
of the neighborhood, zoning, the highest and best use determination, and
the degree of comparability between the subject property and the
comparable sales. If the subject property has a significantly larger site

than the comparables used in the appraiser's analysis, the subject property
may not be a typical residential property for the neighborhood.[128]

Apply Approaches. There are three approaches to value: sales comparison, cost,
and income. Appraisal standards in force at the time of the Nomura Appraisals obligated
the appraiser to use all approaches that were applicable to the assignment in question.[129]
For a condominium, the sales comparison approach was applicable. For a single-family
residence, the cost and sales comparison approaches were applicable. For an income-
producing property, the sales comparison and income approaches were always necessary
and required, and the cost approach was often necessary for credible assignment results.
Even when not necessary for credible assignment results, competent appraisers develop
the alternative approaches to validate the results of the approach(es) they utilized.
Different results from alternative approaches are direct indicators of flaws in one of the
approaches. Hence, failure to apply this important set of checks calls into question the
validity of the approach(es) actually used.

Value Reconciliation. USPAP Standards Rule 1-6 specifically addresses the
reconciliation process and demonstrates the importance of this process to the overall
credibility of the appraiser's results. Failure to properly reconcile the results may have a
major impact on both the reliability of the results as well as the user's ability to
understand the appraisal findings. Examples of common flaws in this category include

---

[128]   Fannie Mae Selling Guidelines, Sect. 402.02, Property and Appraisal
Analysis, 1994 (excerpt).

[129]   *See, e.g.*, USPAP 2005 Departure Rule, lines 432–436, and Statement On
Appraisal Standards No. 7, lines 3331–3333. Statement 7 provided that departure from
any applicable requirement would render the appraisal as "Limited" and not "Complete."

failure to use the cost approach for non-condominium properties (question 15), and

finding a value outside of the range of adjusted comp values (question 23).

Report Value. USPAP Standard 2 requires appraisers to report results in a manner

that is not misleading. The form and content of residential form appraisal reports

generally fall under the rubric of Standards Rule 2-2(b). A report that is suspect of being

misleading will lack credibility for the user regardless of the accuracy of the appraisal

results. The Nomura Appraisals at issue have, however, already been determined to

materially lack accuracy due to the inflation of their value results. This category thus

focuses on whether the manner in which the incorrect results were transmitted raises

questions about the credibility of the results. Questions that examine this criterion

include whether or not the appraised value was more than 10% higher than the prior

listing within the last year (question 4), and a land value ratio outside of the normally

expected range of 20% to 30% (question 14).

<div style="text-align:center">iv.   Appraisal Report Topics</div>

Fourth among the aspects are the topics that are covered in the appraisal report

itself. These include the property, the transaction, the approaches to value, the market

analysis, and the comparables used in the process. For a summary appraisal report,

conducted under USPAP 2005, this aspect and these categories would have been derived

directly from Standards Rule 2-2, and specifically sections 2-1(b), 2-2(b)(iii), 1-3, and

1-4. The appraisal report that an appraiser fills out, typically on a URAR from the GSEs,

collects certain key information necessary for the development of a credible appraisal. A

poorly developed report would potentially (and indeed probably) mislead a client or other

user, and hence lack credibility.

Confidential   The Credibility Assessment Model

The Appraisal Report Topics aspect comprises several categories: Property,

Transaction, Approach, Market, and Comps. The relative weighting (based on 100% or

1.000) determined for these categories is shown in Table 4-7:

Table 4-7. Appraisal Report Topic Weightings

Appraisal Report Topic	*Contributory Weight*
Property	0.050
Transaction	0.100
Approach	0.150
Market	0.250
Comps	0.450

Property. This category addresses questions about the accuracy of the site

description (question 10). Failure to report properly the site description may lead to

incorrect adjustments to the value. Even if the appropriate comps are determined and the

correct adjustments are measured, an incorrect baseline will result in an incorrect

valuation conclusion. Notably, violations of this category derive from both Standards

Rules 1-2(e) and 2-2(b)(iii). This category is weighted the least among the appraisal

report topics aspect (5% or 0.050 of the total).

Transaction. Deficiencies such as an inaccurate listing history (question 2),

failure to report the receipt of the sales contract (question 5), or an incorrect report of the

sales history (question 11) are all examples of a violation of appropriate transaction

analysis. These examples derive directly from USPAP, particularly Standards Rule 1-5(a)

and (b). The transaction category is weighted twice as high as the property category

(10% or 0.100 of the overall aspect). This higher weight is justified because, unlike the

property category, failure to properly report transactional information will have

repercussions throughout the appraisal analysis and affects many different data gathering,

analytical, and reporting issues.

Approach. Standards Rule 1-4(a), (b), and (c) all deal with determining the appropriate approaches and applying the methodologies of those approaches correctly. Questions that examine this category include whether or not the comparable information was confirmed with a disinterested third-party source (question 18) and whether or not, for a condominium appraisal, at least one of the comparables was from a different condominium project (question 19). This category is weighted somewhat higher than the transaction category (15% or 0.150 of the aspect total) because incorrect application of the approaches to value will have a meaningful impact on every aspect of the appraisal analysis.

Market. USPAP Standards Rules 1-2(e)(i) and (iv) and 1-3(a) all require consideration of the market forces that affect the market value. Correct determination and analysis of these market forces dictates understanding of the highest and best use of the subject, informs selection of comparables, and determines the adjustments to be made. Questions that analyze this category include whether or not the appraiser analyzed market supply/demand factors correctly (question 7), measured property value trends correctly (question 8), or analyzed marketing time properly (question 9). The market analysis carries 25% of the weight (0.250) of this aspect. Higher weighting is assigned to the market analysis category because failure to properly understand, analyze, and report on the market forces can lead to improper selection of comparables (via an incorrect highest and best use analysis), incorrect adjustments (particularly for market conditions) and a misleading report.

Comparables. Each of the approaches discussed in Standards Rule 1-4 use comparable market information. The sales comparison approach, Standards Rule 1-4(a),

directly uses comparables in the sales adjustment grid. Standards Rule 1-4(b), the cost

approach, requires comparables to determine site value and obsolescence factors. The

income approach, discussed in Standards Rule 1-4(c), requires comparables to determine

market rents and gross rent multipliers. Hence, violations of this category can permeate

through all aspects of the analytical process.

As a significant portion of the appraisal analysis and report directly relies on

proper application of this category, it is given the greatest weight (45% or 0.450) within

the Appraisal Report Topics Aspect. Incorrect comparable selection, analysis, and

reporting will impair any residential appraisal. It would be nearly impossible for any

appraisal analysis to arrive at a correct and credible determination of value if the

appraiser selects the wrong comparables or if the appraiser analyzes the comparables

improperly. Questions that examine an appraiser's comparable selection and analysis

include whether the comparable data was reported correctly (question 20), whether the

appraised value is outside of the range of unadjusted (question 22) or adjusted

comparables (question 23), and whether more recent (question 27) or nearer (question 28)

comps were available.

v.   Magnitude of Impact on Value

Finally, the magnitude of impact on value is derived from USPAP Standards Rule

1-6(a), which requires an appraiser to reconcile the quality and quantity of the data

available, and Standards Rule 2-2(b)(ix), which requires that the findings be properly

summarized and reported.

The Magnitude of Impact on Value aspect recognizes that there is a difference

between whether a violation has an impact on value (*i.e.*, if that impact is direct, indirect,

or supportive) and its magnitude (*i.e.*, high, modest, or nominal). Because the appraisals

Confidential   The Credibility Assessment Model

under review have already been determined to be inflated and inaccurate, I have given

this aspect less relative weight to the other aspects. This aspect is informed by the degree

to which deficiencies in the appraisal contributed to that inaccuracy. As such, the weight

of this aspect is primarily assigned to the high-magnitude category (80%), while the

remainder is divided between the modest (19%) and nominal (1%) magnitude categories.

Table 4-8. Magnitude of Impact on Value Category Weightings

Magnitude of Impact Categories	Contributory Weight
High	0.800
Modest	0.190
Nominal	0.010

High. Examples of areas of focus that can have a high magnitude impact on the

value conclusion (and thus the credibility of the analysis) include, but are not limited to:

- Was the appraised value of the subject less than or equal to 10% higher than the most recent listing within the last year? (question 4)

- Is the land value ratio greater than 20% and less than 30%? (question 14)

- Did the appraiser correctly report comparable sale transaction data? (question 20)

- If income approach, do the mix of units for the comps match the mix of units for the subject? (question 24)

In each of these situations, the magnitude of impact would be materially

significant on the accuracy of the appraisal findings, and hence the underlying credibility

of the analysis and report, irrespective of the mechanism of impact (direct, indirect, or

supportive). As such, these questions aid in understanding why the appraisal was biased

and inaccurate, and they demonstrate the connection between the appraisal process and

the valuation conclusions.

Modest. As with the high magnitude situations, there is no particular linkage

between the modest magnitude impacts and the mechanism for those impacts. This

65

category carries a much lower proportion of this overall aspect, but it remains important for an understanding of the linkage between the appraisal process and value accuracy. For example, while question 10 (Is the subject site description correct?) has only a supportive relationship to the impact on value, the impact itself is modest. This question derives from Standards Rule 1-2(e)(i), and it affects both the sales comparison approach, Standards Rule 1-4(a), and the cost approach, Standards Rule 1-4(b). Since both of these approaches depend on many other factors, an incorrect site description itself may have a direct but only modest impact.

Nominal. Some categories of problems may have a direct or indirect impact, but only a nominal potential impact on the overall value conclusion. For example, not reporting an accurate listing history for the subject (question 2) has a direct impact on the accuracy of the results, but the actual magnitude of the impact may be small if the results are well-supported in other ways, such as via the cost or income approaches.

C.   Methodology of Weighting of Questions for Assessing Credibility

Each credibility assessment question utilized by the Greenfield CAM is scored according to the five credibility aspects—Reasonable Appraiser Standard, Impact on Value, Appraisal Process, Appraisal Report Topics, and Magnitude of Impact—and the applicable categories within each credibility aspect. Together, these scores are applied to each particular credibility assessment question. For example, a particular question may examine a factor that has a direct impact on value, may contribute to the accuracy of the appraisal, and may have a high magnitude impact on the appraisal accuracy.

For coherency, the categories within each credibility aspect collectively total to 100% of that aspect's total impact. However, the weighting of each category varies

Confidential   The Credibility Assessment Model

according to its differential impact on the credibility of an appraisal.[130]   Table 4-9

summarizes the weighting applied to each category within each aspect.

Table 4-9. Scoring Overview – Weighting of Aspects and Categories

Aspect	Aspect Weight	Category	Contributory Weight
Reasonable Appraiser Standard	5	Accurate	0.400
		Complete	0.200
		Objective	0.200
		Trustworthy	0.200
Impact on Value	4	Direct	0.750
		Indirect	0.200
		Supportive	0.050
Appraisal Process	3	Definition of Problem	0.125
		Scope of Work	0.125
		Data Collection & Property Description	0.125
		Data Analysis	0.125
		Land Value Opinion	0.125
		Apply Approaches	0.125
		Value Reconciliation	0.125
		Report Value	0.125
Appraisal Report Topics	2	Property	0.050
		Transaction	0.100
		Approach	0.150
		Market	0.250
		Comps	0.450
Magnitude of Impact on Value	1	High	0.800
		Modest	0.190
		Nominal	0.010

The overall score assigned to a negative answer to each credibility assessment

question is the sum of the individual scores for each category implicated by the question.

---

[130]   The type of scoring methodology I have utilized in developing the CAM is well recognized and accepted in the industry. *See, e.g.*, FNC's CollateralDNA.com automated appraisal scoring and review process. *See also* PRNewswire, *FNC, Inc. Introduces Collateral DNA, Data and Analytics for Real Estate*, Oct. 3, 2013, http://www.prnewswire.com/news-releases/fnc-inc-introduces-collateral-dna-data-and-analytics-for-real-estate-55924077.html (last visited Oct. 24, 2013); Veros, VeroScore, http://www.veros.com/valuation-products/veroscore.aspx (last visited Feb. 21, 2014).

The Credibility Assessment Model

Since the aspects are weighted 5, 4, 3, 2, or 1, the total weight given to a category is in turn the product of the aspect weight times the category weight.[131] For example, a flaw in an appraisal that has a direct impact on value will have a contributory score of 3.00 (computed as 4 times 0.750). Each question, however, implicates categories from each of the five aspects. For example, questions 24 and 25 have a direct and high-magnitude impact on value; contribute to the accuracy of the appraisal; implicate the data collection, data analysis, and value reconciliation appraisal processes; and fall under the "Comps" appraisal report topic category. Since each question is rated within all five aspects, the total score for each question is the sum of the contributory weights in all five aspects.[132]

Appendix 4-6 summarizes these various weightings.[133]

---

[131]   CoreLogic and Equifax have similar automated scoring systems for appraisal review. *See* CoreLogic, *LoanSafe Appraisal Manager*, at 2 (CoreLogic, 2011); *see also* StreetLinks LLC's *StreetLinks LenderPlus* and *StreetLinks SCORe Brochure.*

[132]   This approach is consistent with the increasing systemization and automation in the appraisal process. Firms offer not only models for assessing the value opinion in an appraisal, but also for assessing the performance of the appraisal. For example, in 2004, FNC, Inc., released what they called the "Generally Accepted Appraisal Rules" (or GAAR) in an effort to automate the appraisal review and scoring process. FNC Inc., *FNC Review Scores*, at 2 (FNC Inc., white paper, Feb. 2013). Their process, called the *Appraisal Score, was developed in conjunction with their mortgage lending* clients. Although I have not had an opportunity to review it in detail due to its proprietary nature, the Appraisal Score relies on a semi-parametric model to assess compliance with FNMA/FHLMC guidelines as well as FHA/VA Rules. FNC found that scores tended to be driven by the quality of comparable sales, and that scores were generally deteriorating during the market meltdown. FNC Inc., *Scores for Valuation Reports: Appraisal Score & BPO Score*, at 12 (FNC Inc., white paper, April 2012).

Also, CoreLogic's LoanSafe Appraisal Manager™ product uses an analytical model that allows users to analyze the appraisal for completeness, compliance, consistency, and comparables selection. *See, e.g.,* http://www.corelogic.com/products/loansafe-appraisal-manager.aspx (last visited on Feb. 21, 2014).

[133]   *See* Appendix 4-6, Credibility Questions and Scoring.

D.   Basis for Credibility Assessment Question Scoring

Each of the questions I used to score the Nomura Appraisal reports was derived

from USPAP and other applicable appraisal standards, along with my training,

experience, and expertise in the field of appraisal and appraisal review. A negative

answer to each question relates to a deviation from or violation of USPAP and/or GSE

appraisal guidelines. An explanation as to which credibility assessment questions apply

to which aspects and categories is set forth below. Attached as Appendix 4-6 is a chart

summarizing the scores for each credibility question.

Question 1 (score of 4.44): Are the legal address and parcel ID sufficient to

identify the subject? The value of a property whose legal interests are not perfectible,

transactable, and transferable is significantly diminished. Accuracy in parcel I.D. and

legal address are central to the property's value. If the legal address and parcel I.D. are

incomplete and/or inaccurate, the property may not be readily identified. If the property

cannot readily be identified, the sources of value associated with that property may be

less than accessible. This question directly measures the accuracy of the appraisal and

competency of the appraiser. The former is covered under USPAP Standards Rule

1-2(e), while the latter is mandated by USPAP's competency provision. This question

also examines problem definition, scope of work, and data collection issues, which are

binding requirements both in the data analysis phase of USPAP (Standard 1) and in the

reporting phase (Standard 2). A negative answer to this assessment question has a

supportive level impact on value and a nominal magnitude of impact on value, and it

violates the accuracy and completeness portions of the reasonable appraiser standard.

This violates the problem definition, scope, and data collection portions of the appraisal

process, and it falls under the "Property" appraisal report topic category, which is generally considered of low importance.

Question 2 (score of 4.54): Did the appraiser report an accurate listing history for the subject? Listing history is important, as it provides an indication of marketplace interest in the subject property, specifically market responsiveness to prices that may have been asked for the subject property. This question tests problem definition, scope of work, and data collection, as well as the accuracy and objectivity of the appraiser. In reviewing these and other appraisal reports, I have found that an inaccurate listing history suggests a lack of objectivity (in this case, bias) on the part of the appraiser, and may render the report misleading in violation of USPAP Standard 2. A negative answer to this assessment question has a supportive level impact on value and a nominal magnitude of value impact, and it violates the accuracy and objectivity portions of the reasonable appraiser standard. This question implicates the "Transaction" appraisal report topic category, which is generally considered of moderate importance.[134]

Question 3 (score of 7.14): If there was a prior subject listing, was appraised value lower than listing price? A negative answer to this assessment question would violate the accuracy and trustworthiness portions of the reasonable appraiser standard and has a direct, but only modest-magnitude, impact on value. This violates the data collection and data analysis portions of the appraisal process, and it falls under the "Transaction" appraisal report topic category, which is generally considered of moderate importance.[135]

---

[134]   *See, e.g.*, NAA_2005_AR6_1001901637.
[135]   *See, e.g.*, NAA_2005_AR6_1001901637.

Question 4 (score of 7.13): Was the appraised value of the subject less than or equal to 10% higher than the most recent listing within the last year? A listing price can be construed as a form of a shadow comp sale, setting a ceiling above which a property is unlikely to sell, unless there are substantial changes in the condition of the property, its presentation and promotion, or the market. Therefore, if the property is appraised at a substantially higher level, for example 10% or more higher than a prior listing price, there is a clear question as to the reasonableness of such a value conclusion in the absence of justification. Accordingly, a fundamental question of credibility is raised by an appraisal report whose value conclusion, without elaboration or justification, is 10% or more higher than the prior listing. My own personal investigation of appraisals evidencing this problem indicates that appraisers in violation of this question fail to analyze or explain indications of abnormally high market conditions. This question is directly derived from violations of Standards Rule 1-5(a) and (b) and is typically linked to violations of Standards Rules 1-2(e), 1-3(a), and 2-2(a)(iii). An appraised value significantly higher than the price at which the owner attempted to sell the property, absent significant analysis, explanation, and justification, lacks credibility and results in a misleading report. A negative answer to this assessment question has a direct and high-magnitude impact on value, and it violates the objectivity and trustworthiness categories of the reasonable appraiser standard. This question implicates the data collection, data analysis, and report value categories of the appraisal process, and it falls under the "Transaction" appraisal report topic category, which is generally considered of moderate importance.[136]

---

[136]   *See, e.g.*, NAA_2005_AR6_1002123728.

Question 5 (score of 2.54): If the appraisal was for a purchase, did the appraiser report receipt of sales contract? If specified compliance is not adhered to, then confidence in the results of the property analysis, which is presumed to be based upon such compliance, is inherently compromised. A basic compliance element in a residential appraisal report where financing is associated with the purchase of a property is confirming receipt of the sales contract. The sales contract provides basic information that is central to the property analysis process, which is why USPAP requires it. As with questions 1 and 2, lack of the sales contract compromises the appraisal's completeness. In addition, this is a direct violation of Standards Rule 1-5. A negative answer to this assessment question has a supportive level impact on value and a nominal magnitude of value impact, and it violates the completeness category of the reasonable appraiser standard. This deficiency violates the definition of the problem, scope, and data collection categories of the appraisal process, and it falls under the "Transaction" appraisal report topic category, which is generally considered of moderate importance.[137]

Question 6 (score of 2.54): If the appraiser reported a sales contract, did the appraiser analyze it? If the appraiser does not appropriately, carefully, and thoroughly analyze the sales contract, information that may be pertinent to the valuation analysis may not be sufficiently considered. As analysis of the sales contract is a required part of the appraisal of single-family residences, failure to report that the contract is analyzed, consistent with those standards, indicates a lack of conscientiousness, thoroughness, and attentiveness. This question is linked to question 5, and it relates to the same USPAP standards. This question is separate because an appraiser's failure to both report and

---

[137] *See, e.g.*, NHELI_2007_2_2002180362.

analyze the sales contract would be significantly more egregious than a simple failure to

analyze. Hence, an appraiser's failure to do both would carry a total score of 5.08

(2 times 2.54), reflective of the seriousness of the breach of appraisal standards. A

negative answer to this assessment question has a supportive impact on value and a

nominal magnitude of value impact, and it violates the completeness category of the

reasonable appraiser standard. This deficiency would violate the scope, data collection,

and data analysis categories of the appraisal process, and it falls under the "Transaction"

appraisal report topic category, which is generally considered of moderate importance.[138]

     Question 7 (score of 5.24): Did the appraiser report supply/demand correctly?

This question is derived directly from USPAP Standards Rules 1-2(e)(iv), 1-3(a), and

2-2(b)(x). Asset values are influenced by the market place conditions for those assets.

Stronger demand creates conditions conducive to higher values, while weaker demands

can lead to lower values. The prices of property transactions are influenced by the

relationship of the demand to the supply for that type of property. A shortage of supply

relative to demand, leads to higher prices than there would be if there were more supply

than demand. If a real estate appraiser incorrectly comprehends market conditions,

specifically the relationship between demand and supply regarding the property interests

in question, the contextual assessment of the valuation is inherently compromised.

Correctly comprehending property market conditions is the foundation of competent

property valuation analysis. The real estate appraiser could correctly comprehend the

demands and attributes of the market but then incorrectly describe those conditions. If

the conditions of supply and demand are incorrectly reported, a property analysis based

---

    [138]   *See, e.g.*, NAA_2005_AR6_1001831518.

upon such flawed information is inherently compromised. Such errors and omissions lead to incorrect sales comp adjustments, incorrect assessment of market rents (in the case of income-producing properties), and inevitably to a value opinion that is inaccurate and not credible. A negative answer to this assessment question has an indirect and modest-magnitude impact on value, and it would violate the accuracy and objectivity categories of the reasonable appraiser standard. This deficiency would violate the data collection and data analysis categories of the appraisal process, and it falls under the "Market" appraisal report topic category, which is generally considered of moderate importance.[139]

Question 8 (score of 5.24): Did the appraiser report property value trend correctly? This error has much the same effect as Question 7. Fundamental to effective property valuation is an appraiser's comprehension of the implications of property value trends, generally, and then assessing the effects of those property value trends on the property interests in question. However, if the information concerning property value trends the appraiser relied upon is incorrect, the analysis is inherently compromised.

Property value trends influence the value of the subject property, consistent with the fundamental valuation principle that the value today of any asset is a function of the present value of the future benefits associated with that asset that might be realized by the owner of that asset. Property value trends can exert significant influence upon the reliability of property value. To the extent that property values were decreasing, yet the appraiser represented them as increasing, a different value conclusion might be reached,

---

[139]   *See, e.g.*, NAA_2005_AR6_1001901637.

than if value trends had been reported as declining. Misstating property value trends

raises questions about the reliability of the valuation analysis itself.

In addition, an appraiser's failure to understand or correctly analyze or report

market value trends will inevitably lead to a failure to correctly analyze prior sales and

listings, as required under Standards Rule 1-5, as well as a failure to correctly analyze

prior comp sales as required on FNMA/FHLMC form appraisals. A negative answer to

this assessment question has an indirect and modest-magnitude impact on value, and it

violates the accuracy and objectivity categories of the reasonable appraiser standard.

This deficiency violates the data collection and data analysis categories of the appraisal

process, and it falls under the "Market" appraisal report topic category, which is

generally considered of moderate importance.[140]

Question 9 (score of 5.24): Did the appraiser report marketing time correctly?

Marketing time is linked to the same problems that arise in questions 7 and 8, but it also

leads to a failure to correctly analyze and adjust for market condition changes in the sales

comps. Marketing time can vary depending upon the attributes of the property market

conditions, sellers' sophistication and motivation, and buyers' sophistication and

motivation. When the demand exceeds supply, marketing time tends to be less than in

more balanced market conditions. Correspondingly, when supply is greater than demand,

marketing time will be longer, as more time is required to clear a market of a given

number of properties, than when fewer such properties are on offer than when many such

properties are on offer. When property values are increasing, marketing time tends to be

shorter, as prospective purchasers want to move quickly so as to avoid having to pay a

---

[140] *See, e.g.*, NAA_2005_AR6_1001831518.

higher price. Marketing time is an important attribute in evaluating market conditions,

both influencing other aspects of a property market, and concurrently being influenced by

other aspects of the property markets. If the appraiser reached the value conclusion based

on the correct understanding of marketing time, yet described marketing time incorrectly,

then the appraiser's carelessness and incompetence in completing the appraisal process

renders the appraisal report suspect. A negative answer to this assessment question has

an indirect and modest-magnitude impact on value, and it violates the accuracy and

objectivity categories of the reasonable appraiser standard. This deficiency violates the

data collection and data analysis categories of the appraisal process, and it falls under the

"Market" appraisal report topic category, which is generally considered of moderate

importance.[141]

Question 10 (score of 4.62): Is the subject site description correct? This

question is specifically a violation of Standards Rules 1-2(e)(i), 2-2(b)(iii), potentially

Standards Rule 1-2(e)(v), and for non-condominium properties, Standards Rule 1-4(b)(i).

The valuation analysis is presumed to be premised upon correct, accurate, reliable

information about key factors that influence property value. If the appraiser's description

of the real estate—specifically, the land on which the improvements are located—is

incorrect, then the resulting appraiser's analysis of that real estate would be based on

incorrect information and therefore likely to be incorrect as well. The consequences of

an appraiser's incorrect site description are pervasive and can severely compromise the

selection and evaluation of sales comps, leading to a variety of analytical decisions that

could impair the credibility of the appraisal. It would be very difficult, if not impossible,

---

[141]   *See, e.g.*, NAA_2005_AR6_1001831518.

to correctly analyze the cost approach or the various site adjustments (size, location, etc.) in the sales comparison approach with an incorrect description of the site. A negative answer to this assessment question has a supportive level impact on value and a modest magnitude of value impact, and it violates the accuracy and objectivity categories of the reasonable appraiser standard. This deficiency violates the problem definition, scope, and data collection categories of the appraisal process, and it falls under the "Property" appraisal report topic category, which is generally considered the least important of those categories.[142]

Question 11 (score of 4.94): Did the appraiser report the sales history correctly?
The sales history of property represents evidence of the market's judgment of the value of that property at a particular point in time. Just as history informs recognition of issues, opportunities, and decisions in the present, so, too, does sales history provide instruction for residential property appraisal. If the appraiser incorrectly reports the sales history, any analysis of that sales history necessarily is similarly flawed, and conclusions that might be derived from it are correspondingly compromised. If the conclusions from the sales history are compromised, then the value opinion for that property would necessarily be less than reliable. Correctly reporting sales history is required under Standards Rule 1-5(a) and (b). An appraiser's failure to report and analyze the sales history may lead to incorrect assumptions about comp selection, comp adjustments, and even site value (in the cost approach). A negative answer to this assessment question has an indirect and modest-magnitude impact on value, and it would violate the accuracy and objectivity categories of the reasonable appraiser standard. This deficiency violates the problem

---

[142]   *See, e.g.*, NAA_2005_AR6_1001902888.

definition and data collection categories of the appraisal process, and it falls under the

"Transaction" appraisal report topic category, which is generally considered of moderate

importance.[143]

Question 12 (score of 3.94): Did the appraiser analyze all prior sales of the

subject and comparables? This question is derived from question 11. The analysis of

prior transactions—for both the subject property and the comparable properties used to

value the subject property—is a core component of the property valuation process. Since

residential property valuation emphasizes the sales comparison approach, specifically

considering the value of the subject property in relationship to the prices paid for

presumably comparable properties, considering the relevant sales of those comparable

properties—as well as the subject property itself—is essential to a competent valuation

analysis. For example, if the sales history of a supposedly "comparable" property

reflected a significantly different pattern than that of the subject property, it may reveal

that the markets for the two properties are on diverging trajectories (perhaps because of

the changing desirability of their neighborhoods or school districts), which may in turn

reveal that the two properties are not truly comparable, even though they may share

proximity and physical characteristics. If the prior sales of both the subject and

comparables are not fully, consistently, and appropriately analyzed, then conclusions

drawn from incomplete analysis are susceptible to being less than reliable. Failure to

analyze prior sales of the subject property is a violation of Standards Rule 1-5(a) and (b).

Analysis of prior sales of the comparables is required by the FNMA/FHLMC appraisal

---

[143] *See, e.g.*, NAA_2005_AR6_1001833854.

report forms used by these appraisers who performed the Nomura Appraisals.[144] A

negative answer to this assessment question has an indirect and modest-magnitude impact

on value, and it violates the completeness and trustworthiness categories of the

reasonable appraiser standard. This deficiency violates the data collection and data

analysis categories of the appraisal process, and it falls under the "Transaction" appraisal

report topic category, which is generally considered of moderate importance.[145]

Question 13 (score of 8.13): On an annualized basis, was the appraised value of

the subject less than 10% higher than the prior sales price of the subject? This question

is one of the most important assessment questions. It captures violations of USPAP

Standards Rule 1-5(b), which requires not just that prior sales be reported, but also that

they be analyzed. Many of the Nomura Appraisals stated appraised values that could not

be explained by prior sales of the subject and/or the comps. In practice, appraisal

reviewers recognize this situation as a "red flag" hinting at illegal property flipping. A

negative answer to this assessment question has a direct and high-magnitude impact on

value, and it violates the accuracy and trustworthiness categories of the reasonable

appraiser standard. This error violates the data collection, data analysis, and report value

categories of the appraisal process, and it falls under the "Transaction" appraisal report

topic category, which is generally considered of moderate importance.[146]

---

[144]   While the loan originators may not have required the FNMA/FHLMC form
process *per se*, in all of my examinations of the loan files, I have yet to see an appraisal
report that did not utilize the FNMA/FHLMC process.

[145]   *See, e.g.*, NAA_2005_AR6_1001902888.

[146]   *See, e.g.*, NAA_2005_AR6_1001833854.

Question 14 (score of 8.60): Is the land value ratio greater than 20% and less than 30%? In my investigation and review of inaccurate appraisals, I have found land value ratios ranging from 8% to as high as 85%. The appraisal profession has long perceived that land value ratios higher than 30% point to a high degree of physical or functional disutility and a potential marketing problem for the property in question. Ratios lower than 20% suggest overbuilding the neighborhood, and again imply a severe marketing problem. In addition, in my review of individual appraisals, both in this case and in my experience as a review appraiser, it appears that some appraisers used the land value in the cost approach as a "plug" figure to get the cost approach to artificially support an otherwise unsupported value opinion in the other approach(es), accompanied by a failure to justify lower or higher ratios. Either way, this is tied to the requirements under Standards Rule 1-4(b)(i) for all non-condominium properties. A negative answer to this assessment question has a direct and high-magnitude impact on value, and it violates the accuracy and trustworthiness categories of the reasonable appraiser standard. This violates the data analysis, land value opinion, apply approaches, and report value categories of the appraisal process, and it also falls under the "Approaches" appraisal report topic category, which is generally considered of moderate importance.[147]

Question 15 (score of 4.42): Did the appraiser use the cost approach for non-condominium properties? Appraisal doctrine, regulation, and practice emphasize three valuation methods: sales comparison, income, and cost. While residential valuation assigns primary emphasis to the sales comparison method, there are instances in which the cost approach is often expected or required by consumers of appraisal reports. To the

---

[147]   *See, e.g.*, NAA_2005_AR6_1001831518.

extent the cost approach is expected but not included, then the appraisal report falls short

of the user's expectations. The cost approach may include information that informs the

appraiser's assessment of the overall value of the property. Importantly, the cost

approach may include a value calculation that, when considered alongside a sales

comparison analysis and an income approach analysis, would influence the overall value

conclusion. A value opinion reached absent consideration of all of the relevant

information necessarily is less informed than a value opinion taking into account all such

information, as required under Standards Rule 1-4(b). When applicable, failure to use the

cost approach results in a limited appraisal even if the approach was not necessary.

Throughout the relevant period applicable to the Nomura Appraisals, the cost

approach was required by USPAP whenever an appraiser's peers in the industry would

find use of the cost approach necessary. Regardless of the applicable edition of USPAP,

the appraiser is required to disclose the reasoning to support the decision to exclude the

cost approach in the appraisal report. In my review of the Nomura Appraisals, I have not

found any that explain the absence of a cost approach that would satisfy the USPAP

requirement.

This error has an indirect and modest-magnitude impact on value, and it violates

the completeness and objectivity categories of the reasonable appraiser standard. This

error violates the scope, apply approaches, and value reconciliation categories of the

appraisal process, and it falls under the "Approaches" appraisal report topic category,

which is generally considered of moderate importance.[148]

---

[148]   *See, e.g.*, NHELI_2006_FM2_2001905280.

Question 16 (score of 7.62): Did the appraiser calculate the physical depreciation correctly? This assessment question evaluates whether there is a violation of Standards Rule 1-4(b)(iii), and it leads to a failure to correctly adjust for effective age and condition in the sales adjustment grid, as required under Standards Rule 1-4(a). The concept of depreciation is central to financial accounting, valuation theory, and investment analysis practice. Just as any used item may be less functional, serviceable, and appealing than might be a new item, so, too, is existing property often generally less appealing than new property. Furthermore, costs are associated with the age and use of a property (or even a specific feature of a property), and those costs must necessarily be considered in appraising the property's value. For example, if the roof of a residential property typically has a useful life of 20 years before needing replacement, and the replacement costs $20,000, then it follows that two otherwise identical properties would be valued differently if one of them has a new roof while the other has a roof with a remaining useful life of two years. A negative answer to this assessment question has a direct, but only modest-magnitude, impact on value, and it violates the accuracy and objectivity categories of the reasonable appraiser standard. This error violates the data collection, apply approaches, and data analysis categories of the appraisal process, and it falls under the "Approaches" appraisal report topic category, which is generally considered of moderate importance.[149]

Question 17 (score of 7.62): Did the appraiser report external obsolescence correctly? This question, like question 16, is derived from a violation of Standards Rule 1-4(b)(iii). This question pertains to the failure to adjust correctly for location in the sales

---

[149]   *See, e.g.*, NAA_2005_AR6_1001831518.

Confidential   The Credibility Assessment Model

adjustment grid as required under Standards Rule 1-4(a), and it may also lead to failures

under Standards Rule 1-3(a) and (b). External obsolescence exerts an important

influence upon property values because factors external to the boundaries of the property

can profoundly influence the functionality, appeal, and utility of the property. A property

could function quite serviceably within the boundaries of the lot, but if its immediate

external context is obsolete, the property's value could be materially compromised,

relative to what it might be, were there not to be such external obsolescence. If an

appraisal report does not provide the correct discussion of external obsolescence, the

value opinion of that appraisal report is suspect. A negative answer to this question has a

direct, but modest-magnitude, impact on value, and it violates the accuracy and

objectivity categories of the reasonable appraiser standard. This deficiency violates the

data collection, apply approaches, and data analysis categories of the appraisal process,

and it falls under the "Approaches" appraisal report topic category, which is generally

considered of moderate importance.[150]

   Question 18 (score of 3.82): Did the appraiser confirm a broker/builder source

for comparables using a disinterested third-party source? USPAP Standards Rule

2-2(b)(vii) requires that the appraiser report the scope of work as developed under

Standards Rule 1-2(f).[151] An appraiser's failure to confirm comparables in an objective

manner would be a clear violation of these scope of work requirements. In addition, the

Conduct provision of the Ethics Rule requires that "[a]n appraiser must not accept an

---

[150]   *See, e.g.,* NAA_2005_AR6_1001831518.

[151]   Since 2008, this requirement is contained in a separate Scope of Work Rule.
The citations are to USPAP 2005.

Confidential   The Credibility Assessment Model

assignment that includes the reporting of predetermined opinions and conclusions."[152]

While the comparables may have been correct, the failure to use a disinterested source for

confirmation would call into question the credibility of the appraiser's work. Information

provided by interested parties may be less reliable than information provided by

disinterested parties. Consequently, failing to confirm information provided by those

without an interest in the transactions, compromises the credibility of the appraisal report.

If the information provided by interested parties is not confirmed with disinterested third

parties, then an analysis employing that information may be flawed. This error has a

supportive impact on value and a modest magnitude of impact on value, and it violates

the objectivity and trustworthiness categories of the reasonable appraiser standard. This

deficiency violates the data collection, apply approaches, and data analysis categories of

the appraisal process, and it falls under the "Approaches" appraisal report topic category,

which is generally considered of moderate importance.[153]

Question 19 (score of 5.42): For condominiums, was at least one of the

comparables outside of the subject's condominium project? This is strictly required

under FNMA/FHLMC guidelines and, as noted, the appraisals in question all used those

analysis/reporting formats. While FNMA/FHLMC guidelines do not cite it, this question

is derived from USPAP Standards Rule 1-4(a). In addition, USPAP Statement 10 and the

Supplemental Standards Rule incorporate those guidelines into USPAP for mortgage

appraisals prepared for federally related transactions.[154] A negative answer to this

---

[152]   USPAP 2005 Ethics Rule, lines 257–258.

[153]   *See, e.g.*, NHELI_2006_FM1_2002168258.

[154]   Statement 10 was issued on July 10, 2000, and has been a binding
requirement under USPAP ever since the 2001 edition.

question has an indirect and modest-magnitude impact on value, and it violates the

accuracy and objectivity categories of the reasonable appraiser standard. Just as different

apartments in an apartment building may have more in common than they might with

apartments in other apartment buildings, so, too, do condominiums in the same complex

have more in common than with condominiums located in other condominium

complexes. While the use of condominiums located in the same condominium complex

can facilitate comparison, these shared circumstances may lead to a self-referential

economic comparison because transaction information pertaining to condominiums in a

particular complex may be less than representative of the relevant market. This problem

would manifest, for example, if an appraisal were completed of a condominium located

in a condominium complex that exhibited far more buying/selling activity, due to

uncommon circumstances, than a condominium complex nearby. Because of the

potential for the price distortions within a particular condominium complex, the appraisal

of a condominium should consider the sale of at least one condominium unit not located

in the subject complex. This error violates the data collection, apply approaches, and

data analysis categories of the appraisal process, and it falls under the "Approaches"

appraisal report topic category, which is generally considered of moderate importance.[155]

Question 20 (score of 6.63): Did the appraiser correctly report comparable sale

transaction data? This question derives from requirements under FNMA/FHLMC

guidelines, which are incorporated into USPAP under Statement 10 and the Supplemental

Standards Rule. Comparable sale transactions are the foundation of residential appraisal

analysis. To the extent information concerning the comparable sales transaction data is

---

[155]   *See, e.g.*, NHELI_2006_FM2_2001836188.

incorrect, then the appraisal analysis is incorrect. If the comparable sales transaction data are incorrect, any analysis that may be implemented in reliance upon that incorrect data would be incorrect. If the appraiser had correct information but reported it incorrectly, doing so evidences sloppiness and inattentiveness. Such circumstances raise questions as to the very credibility of the analysis: Was the analysis done using correct data but the data was reported incorrectly? Was the data incorrect? Analysis based on incorrect data is fundamentally flawed. This error has an indirect, but high-magnitude, impact on value, and it violates the accuracy and trustworthiness categories of the reasonable appraiser standard. This error violates the data collection, apply approaches, and data analysis categories of the appraisal process, and it falls under the "Comps" appraisal report topic category, which is generally considered the most important of these categories.[156]

Question 21 (score of 8.83): If a previous sale of a comparable exists, is the current unadjusted price of that comparable less than 10% higher than the prior sale price on an annualized basis? As discussed in question 13, this situation is another "red flag" suggesting illegal flipping. Using comparables with such a material increase in unadjusted price over a short time may lead to bias in the sales adjustment grid developed under Standards Rule 1-4(a). At the very least, use of such a comp would require a significant analysis and explanation to reconcile the very large increase in price with other market conditions indicators (*i.e.,* market "built up" rate, demand/supply, marketing time). The valuation process presumes not only reliability, but also reasonableness, in the information considered. In particular, the premise of valuation practice concerning information that is relied upon to draw conclusions about the subject property, is that

---

[156]   *See, e.g.*, NAA_2005_AR6_1002007623.

information that is relied upon to draw conclusions about the subject property reasonably

reflects normal—as contrasted to aberrational—market circumstances. As annualized

increases in property values over an extended duration in the low single digit range are

reasonable, the presumption of property values increasing at substantially greater double-

digit rates is not reasonable. Indeed, anecdotally, the "hot" markets in which appraisers

blithely ignored evidence of unusual market conditions changes over time later appear to

be the most problematic markets for biased valuations. Thus, relying on comparable

sales whose last transaction price represented a greater than 10% annualized price gain

from their earlier transaction price, without sufficient explanation justifying the

reasonableness of such circumstances, challenges the reasonableness proposition. A

negative answer to this question has a direct and high-magnitude impact on value, and it

violates the accuracy and trustworthiness categories of the reasonable appraiser standard.

This error violates the apply approaches, data analysis, and value reconciliation

categories of the appraisal process, and it falls under the "Comps" appraisal report topic

category, which is generally considered the most important of those categories.[157]

Question 22 (score of 7.00): Is the appraised value of the subject within the

range of the unadjusted comparable sales prices? As market comparison is the primary

valuation tool employed in all approaches in a residential appraisal, the appropriate and

reasonable implementation of comparable sales analysis is essential for reliable valuation

conclusions. In application, market comparison involves evaluating the subject property

in relationship to the sales of comparable properties. To that end, the subject property is

valued through adjusting the attributes and features of the comparable sales properties to

---

[157]   *See, e.g.*, NAA_2005_AR6_1001904838.

determine the value of subject property. Failure to do so properly constitutes a violation

of Standards Rules 1-4(a) as well as 1-6(a). In general, appraisers are expected to bracket

the subject with comparables when such data is available. Using comparables that are all

skewed relative to the subject may lead to a biased determination of value in violation of

the Ethics Rule. Either way, this violation, on its face, would call the credibility of the

appraisal into question by any reasonable reviewer. This error has an indirect, but high-

magnitude, impact on value, and it violates the accuracy and trustworthiness categories of

the reasonable appraiser standard. This error violates the data collection, apply

approaches, data analysis, and value reconciliation categories of the appraisal process,

and it falls under the "Comps" appraisal report topic category, which is generally

considered the most important of those categories.[158]

    Question 23 (score of 7.00): Is the appraised value of the subject within the

range of the adjusted comparable sales prices? Similar to question 22, a negative answer

to this question derives from violations of Standards Rules 1-4(a) and 1-6(a). A gross

price adjustment can exert a major impact on the ultimate valuation conclusion. That

said, it follows that the larger the adjustment, the larger the impact upon the valuation

conclusion for minor gross adjustments have minor value impacts, while major gross

adjustments have major valuation impacts. In the market comparison valuation process,

the probable market value is bounded by the higher and lower adjusted comparable sales

prices for the comparable sales properties considered in that neighborhood. Depending

on circumstances, the indicated property value conclusion may be somewhere in the

middle, tilted toward the higher or perhaps toward the lower end of the adjusted

---

[158]   *See, e.g.*, NAA_2005_AR6_1001833854.

comparable sales prices range. An appraisal value conclusion that is outside—rather than

being within—the range of the comparable sales is inherently suspect. A negative answer

to this question has an indirect, but high-magnitude, impact on value, and it violates the

accuracy and trustworthiness categories of the reasonable appraiser standard. This error

violates the data collection, apply approaches, data analysis, and value reconciliation

categories of the appraisal process, and it falls under the "Comps" appraisal report topic

category, which is generally considered the most important of those categories.[159]

Question 24 (score of 9.20): If income approach, do the mix of units for the

comps match the mix of units for the subject? Much like question 25, this violation is so

singularly substantial that a negative answer to this assessment question, by itself, calls

into question the credibility of an appraisal report. For an income-producing property,

the "core" of the appraisal report is the market rent estimate times the gross rent

multiplier ("GRM"). Question 25 deals with the GRM, while this assessment question

deals with the market rent estimate. A consistent and congruent mix of units between the

comps sales and the subject reflects similar proportions of bedroom-bathroom mix

combinations across all of the properties considered. An incongruous comparison, by

contrast, is one between a subject property that consists entirely of one-bedroom, one-

bath units and comparable properties with a very different mix, such as three-bedroom,

two-bath units; two-bedroom, two-bath units; two-bedroom, one-bath units; and studios.

To the extent that the mix of units is not compatible, this results in an "apples-to-

oranges," dissimilar comparison, which undermines the foundational premise of

comparability, and in turn, the reliability of the appraisal.

---

[159]   *See, e.g.*, NHELI_2006_FM1_2001904269.

If the market rent estimate is not supported by an appropriate and comparable mix of units, then the market rent estimate has no validity, which would be a direct violation of Standards Rule 1-4(c)(i) and 1-6(a). This error has a direct and high-magnitude value impact, and it violates the accuracy and trustworthiness categories of the reasonable appraiser standard. The failure to match the mix of units violates the data collection, apply approaches, data analysis, and value reconciliation categories of the appraisal process, and it falls under the "Comps" appraisal report topic category, which is generally considered the most important of those categories.[160]

Question 25 (score of 9.20): If income approach, does the gross rent multiplier ("GRM") used fall within the range of unadjusted GRMs for first 3 comps in the appraisal report? This assessment question is at the core of the valuation for income-producing properties. If the GRM is not supported by the comparable data, and it cannot be explained by the market, then the appraisal analysis simply lacks credibility. As discussed in the commentary concerning Question 22, basing the calculation of value for the subject property on a metric outside of the range of the comparables—absent substantial qualifying explanation—calls into question the suitability of the comparables selected—and even the objectivity of the appraiser. This error is a violation of Standards Rule 1-4(c)—specifically 1-4(c)(iii) and (iv)—as well as a violation of Standards Rule 1-6(a). This has a direct and high-magnitude value impact and it violates the accuracy and trustworthiness categories of the reasonable appraiser standard. This error violates the data collection, apply approaches, data analysis, and value reconciliation categories of

---

[160]   *See, e.g.*, NAA_2005_AR6_1001831518.

the appraisal process, and it falls under the "Comps" appraisal report topic category,

which is generally considered the most important of those categories.[161]

Question 26 (score of 6.63): If income approach is used, do the market rent

estimates for each unit mix fall within the range of rents reported for each unit mix for

the first three comps? An important element of comparability of the market comparison

appraisal method is similar and compatible economic relationships. The most

fundamental economic relationship in an income property is the rent for space in that

property. The intention is that properties that rent at a certain level should be compared

to properties that rent at a similar level. Similar rent levels indicate compatibility and

commonality in terms of the properties' internal and external place attributes and markets

served. Properties that have spaces renting at different rent levels are considered less

than similar and, therefore, less than comparable. If the market rents for the subject

property do not fall within the range of the market rents for the sales comps, then the

sales comps are deemed to be less than comparable. Consequently, an appraisal based on

such non-standard market rents could be significantly misleading.

Questions 24 and 26 are related in that they are derived from similar types of

violations, but question 26 carries a somewhat lower score on the credibility scale. In

general, the lack of adequate rental comp data (question 24) in and of itself renders an

appraisal less than credible. Question 26 examines the more specific issue of an adequate

data mix where the appraiser has somehow "skewed" the results in a biased direction,

which is a violation of Standards Rules 1-4(c)(i) and 1-6(a). A negative answer to this

question has an indirect, but high-magnitude, impact on value, and it violates the

---

[161] *See, e.g.*, NAA_2005_AR6_1001831518.

accuracy and trustworthiness categories of the reasonable appraiser standard. This error

violates the data collection, apply approaches, and data analysis categories of the

appraisal process, and it falls under the "Comps" appraisal report topic category, which is

generally considered the most important of those categories.[162]

Question 27 (score of 5.02): Did the appraiser use the most recent comps

available? Beyond comparability in terms of the physical attributes of the properties and

the markets served by the properties, the transaction timing of properties selected as sales

comps is an important consideration. The objective of sales comps analysis is to employ

properties that are as similar to the subject as possible and which sold close in time to the

appraisal date. The market conditions that affect property values can often shift

dramatically over relatively short periods of time, so the closer that the date of the

comparable sale is to the sale date of the subject property, the more reflective the

comparable sale would be of the market conditions as of the appraisal date. Relying on

information concerning comparable properties that were sold at more distant, as opposed

to closer, sales dates, may be misleading. In particular, if more recent comps were

available but not used in the appraisal, without explanation, there is an indication that the

comps that were used may be less "comparable" than those that were not used.

The failure to use the most recent comps is a violation of Standards Rules 1-4(a)

and 1-6(a) and potentially the Ethics Rule. It suggests that the appraiser "cherry picked"

comparables in a less-than-objective manner to bias the results in favor of a pre-

---

[162]   *See, e.g.*, NAA_2005_AR6_1001831518.

determined outcome.[163]   A negative answer to this assessment question has an indirect

and modest-magnitude impact on value, and it violates the completeness and objectivity

categories of the reasonable appraiser standard. This violates the data collection, apply

approaches, and data analysis categories of the appraisal process, and it falls under the

"Comps" appraisal report topic category, which is generally considered the most

important of those categories.[164]

     Question 28 (score of 5.02): Did the appraiser use the nearest comps available?

Much like question 27, this assessment question evaluates whether there has been a

violation of Standards Rules 1-4(a) and 1-6(a) and potentially the Ethics Rule. A

negative answer suggests that the appraiser "cherry picked" comparables in a less-than-

objective manner to bias the results in favor of a pre-determined outcome. Given the

importance of proximity to property values, this error is a particularly problematic issue

from a credibility perspective.

     The objective of the sales comparable analysis is to consider properties that are as

similar to the subject property as possible, in order to value the subject property in

relationship to those comparable properties. In addition to considerations of place

attributes, market rent levels, and close transaction dates, the proximity of the comparable

properties to the subject is an important consideration. Even relatively small geographic

differences can translate to significant differences in school districts, commute times for

residents, accessibility of shopping, dining, and other attributes that affect the desirability

---

[163]   Sensitivity tests performed on a subset of Nomura Appraisals indicated that in 71.43% of the cases that violated this question, the comps selected were biased to favor a higher valued outcome. *See, e.g.,* Appendix 4-7 Sensitivity Test for Selecting Comparables.

[164]   *See, e.g.*, NAA_2005_AR6_1001833854.

of residential properties. Properties that are closer to the subject property are generally considered to be more comparable and therefore more representative for the valuation analysis, than are those located at greater distance from the subject property. Thus, disregarding comparable sales comps that are located closer to the subject property in favor of those that are located farther away, without explanation, raises a fundamental question as to the integrity of the appraisal report.

A negative answer to this assessment question has an indirect and modest-magnitude impact on value, and it violates the completeness and objectivity categories of the reasonable appraiser standard. A negative answer to this question violates the data collection, apply approaches, and data analysis categories of the appraisal process, and it falls under the "Comps" appraisal report topic category, which is generally considered the most important of those categories.[165]

Question 29 (score of 8.83): Was the average price per square foot ("PPSF") of the comps in the appraisal report less than or equal to the average PPSF of the comps available in the market at the time of the appraisal?

Comparability can be considered through markets served, place attributes, physical proximity, transaction timing, and more. Price per square foot is an important valuation metric, widely utilized to describe and compare property values. Price per square foot can often be an indicator of distinguishing characteristics that cannot be captured solely by gross living area or room counts. For example, two properties may be similarly sized, but one offers features considered more desirable in the market, such as hardwood floors, vaulted ceilings, crown moldings, granite countertops, and other

---

[165] *See, e.g.*, NAA_2005_AR6_1001976362.

"upgrades," while the second property features more "standard" finishes. The upgraded

property could be expected to have a higher price per square foot than the inferior

property, all other factors being equal. To the extent the appraisal report employs

comparables having a higher price per square foot than a collection of similar properties

that were independently identified through research and multiple listing services, the

transactions chosen as sales comps for the appraisal report may be rather "less

comparable" than those that were disregarded. If more expensive properties are chosen

over less expensive properties, whose attributes closely parallel the attributes of the

subject property, then there is the distinct prospect, without countervailing explanation,

that the former collection of properties that were chosen may be less than comparable to

the subject property. Therefore, the valuation analysis, relying on consideration of those

more expensive and less comparable properties, may be less than reliable.

This assessment question evaluates whether there is a violation of Standards

Rules 1-4(a) and 1-6(a). A negative answer to this assessment question also suggests bias

in a manner that violates the Ethics Rule, and it would render the appraisal report

misleading in violation of the preamble to Standard 2. A negative answer to this

assessment question has a direct and high-magnitude impact on value, and it violates the

accuracy and objectivity categories of the reasonable appraiser standard. A negative

answer to this question violates the data collection, apply approaches, and data analysis

categories of the appraisal process, and it falls under the "Comps" appraisal report topic

category, which is generally considered the most important of those categories.[166]

---

[166]   *See, e.g.*, NAA_2005_AR6_1001902888.

Question 30 (score of 5.02): Was the average site square footage ("SSF") of the comps used in the appraisal report less than or equal to the average SSF of the comps available in the market at the time of the appraisal?

The quantity of space is an important factor influencing the value of a property. For residential property purchases, the need for a certain quantity of space is among the most important motivations. This consideration is reflected in the most basic comparison of property valuation of price per square foot. Because square footage supports the experience, use, and living in residential properties, comprehending and considering the square footage of a property is fundamental in a comparable sales analysis, requiring explanation if comps used in the appraisal report have a SSF less than or equal to the average SSF of the comps available in the market at the time of the appraisal. If the square footage measure is incorrect, however, then the assessment of the value of that property is incorrect.

This assessment question evaluates violations of Standards Rules 1-4(a) and 1-6(a). A negative answer to this assessment question also suggests bias in a manner that violates the Ethics Rule, and it would render the appraisal report misleading in violation of the preamble to Standard 2. A negative answer to this assessment question has an indirect and modest-magnitude impact on value, and it violates the completeness and objectivity categories of the reasonable appraiser standard. A negative answer to this question violates the data collection, land value opinion, and data analysis categories of

the appraisal process, and it falls under the "Comps" appraisal report topic category, which is generally considered the most important of those categories.[167]

Question 31 (score of 4.64): Was the average gross living area ("GLA") of the comps used in the appraisal report less than or equal to the average GLA of the comps available in the market at the time of the appraisal?

As living area is a primary factor motivating the purchase of property, a property that offers more living area than another property is often more highly valued than a property offering less living area, all else being equal. Among the objectives of market comparison analysis is to select comparable properties of similar GLA scale, in comparison to the subject. To the extent that the appraisal report includes sales comps whose GLA is less closely aligned with the subject property than other sales comps, available but not chosen, the analysis in the appraisal report may be flawed and less than reliable, without countervailing explanation.

Much like the last few assessment questions, question 31 is derived from Standards Rules 1-4(a) and 1-6(a). A negative answer to this assessment question has an indirect and modest-magnitude impact on value, and it violates the completeness and objectivity categories of the reasonable appraiser standard. This error violates the data collection and data analysis categories of the appraisal process, and it falls under the "Comps" appraisal report topic category, which is generally considered the most important of those categories.[168]

---

[167]   *See, e.g.*, NAA_2005_AR6_1001902888.

[168]   *See, e.g.*, NAA_2005_AR6_1001831518.

E.   Credibility Threshold

Consistent with USPAP, my review of the Nomura Appraisals confirmed that errors span the range from individually significant to cumulatively significant. Consistent with the prescription of Standards Rule 1-1(b), I started by identifying the credibility assessment questions that in my opinion could, by themselves, lead to "substantial error of omission or commission that significantly affects the appraisal." I then developed a scoring threshold for credibility that required a combination of these types of egregious errors, as prescribed by Standards Rule 1-1 (c). I thus established a threshold for non-credible appraisals where there were a "series of errors that … in the aggregate affects the credibility of result."

I identified six credibility assessment questions to which a negative answer amounts to a substantial major error under USPAP Standards Rule 1-1(b). These questions relate to some of the most fundamental and essential metrics used by appraisers, including price-per-square-foot ("PPSF"), gross rent multiplier ("GRM"), and land value ratio. Negative answers to these questions alone present such a flaw in the appraisal that, in my opinion, they raise very serious questions for any reasonable appraiser as to the credibility of the appraisal, or the resulting appraised value.

While USPAP Standards Rule 1-1(b) provides for situations in which only one very egregious error would render an appraisal less than credible, I developed a credibility threshold that was informed by these major errors, but required additional credibility assessment question errors. I, thus, conservatively defined the threshold of credibility as the mean (average) CAM score of the 6 major error questions and the mean (average) CAM score of the other 25 questions. This approach results in a USPAP Standards Rule 1-1(c) threshold that is conservative.

Table 4-10 shows the CAM scores for the six major error questions I identified.

Table 4-10. CAM Scores for the Six Major Error Questions

Number	Description	Model Score
13	On an annualized basis, was the appraised value of the subject less than 10% higher than the prior *sales price* of the subject?	8.13
14	Is the land value ratio *greater than 20% and less than 30%*?	8.60
21	If a previous sale of a comparable exists, is the current unadjusted price of that comparable less than 10% higher than the prior sale price on an annualized basis?	8.83
24	If income approach, do the mix of units for the comps match the mix of units for the subject?	9.20
25	If income approach, does the gross rent multiplier ("GRM") used fall within the range of unadjusted GRMs for first 3 comps in the appraisal report?	9.20
29	Was the average price per square foot ("PPSF") of the comps in the appraisal report less than or equal to the average PPSF of the comps available in the market at the time of the appraisal?	8.83

Under the Greenfield CAM, the mean score of these 6 major error questions is 8.80, and the mean score of the 25 other CAM question errors is 5.33. Combining these two values results in a USPAP Standards Rule 1-1(c) threshold of 14.13. Thus, I concluded that any appraisal evincing a CAM score greater than 14.13 contains a sufficient magnitude and frequency of errors to render an appraisal not credible. This conclusion results in a scoring threshold that is both internally consistent and consistent with the intent and letter of USPAP. While a negative answer to any of the six major error questions would, by itself, cause a reasonable appraiser to question the credibility of an appraisal, a score at or above 14.13 would, in my opinion, put the credibility of the appraisal in serious doubt.

To evaluate these appraisals in the most conservative light, I then added the average score of these six major error questions to twice the average of the remaining questions (8.80 + 5.33 + 5.33), as this sum would constitute the score from a series of no less than three errors—one of the most egregious and two of the remainder. This sum

totals to 19.46. I then rounded that up to the next whole number, 20, which I determined

to be the appropriate, conservative, credibility threshold.

While a score of 14.13 would put the credibility of the appraisal in serious doubt,

at or above the higher, conservative threshold of 20, it is my opinion that any competent,

reasonable appraiser adhering to appraisal standards and practices applicable at the time

the overstated Nomura Appraisals were prepared could not have believed the original

appraisal to be credible.[169]

---

[169] It is important to note that USPAP Standards Rule 1-1(b) provides for
situations in which only one egregious error would render an appraisal less than credible.
Thus, while it is clear that other reviewers examining these appraisals may come to more
severe conclusions regarding both the overall and the individual levels of credibility, I
exercised an abundance of caution, and focused on those errors, omissions, and standards
violations which, in combination, might render an appraisal less than credible under
Standards Rule 1-1(c).

5.   Greenfield CAM Results and Conclusions

The Greenfield CAM allows me to assess the credibility of each of the original appraisals based on detailed factual inquiry and applicable industry standards and practice at the time. This section addresses the results and conclusions of evaluating the original appraisals for the Nomura properties with the Greenfield CAM.[170]

Beginning with those properties found to be overvalued by more than one standard deviation by the Greenfield AVM, I obtained factual data on 205 original appraisals, of which 198 (96.59%)[171] contain either a single egregious error or a series of smaller errors that would render the appraisal not credible based on a credibility threshold of 14.13. It is my opinion that these appraisals reflect substantial deficiencies that raise serious questions that no reasonable appraiser could have ignored.

However, in an abundance of caution, I conservatively set the threshold higher, at 20, which corresponds to violations of approximately two of the most egregious questions plus numerous smaller errors. As a result, I find that 189 (92.20%) contain either at least two egregious errors or a combination of credibility assessment question errors such that, in my opinion, no reasonable appraiser adhering to the appraisal standards and practices applicable at the time could have believed the appraisals were credible.

---

[170]   As previously discussed, I examined the credibility scores with an eye to the impact of the cost approach question (question 15). As it happens, none of the appraisals would be considered non-credible with the inclusion of this question but would become "credible" if this question was removed at a scoring threshold of 20.

[171]   Of this number, 27 of the appraisals did not contain sufficient information to allow Forsythe/Valocity to collect sales comparables data. Appendix 5-2 lists the GLNs for which Forsythe/Valocity could not collect these data, for reasons such as illegible appraisals or not being able to find a researcher in a particular geographic area. *See* Appendix 5-2, GLNs Where Valocity Data Were Not Collected.

Confidential   Greenfield CAM Results and Conclusions

The 205 appraisals contained 1,428 total errors, for an average of 6.97 errors per appraisal.[172] I would note that the mean score among the 205 appraisals was 43.67 with a median of 44.12 (noting that the distribution of errors followed a fairly bell-shaped Gaussian function). None of the appraisals was error-free.

Figure 5-1. Histogram of Credibility Scores
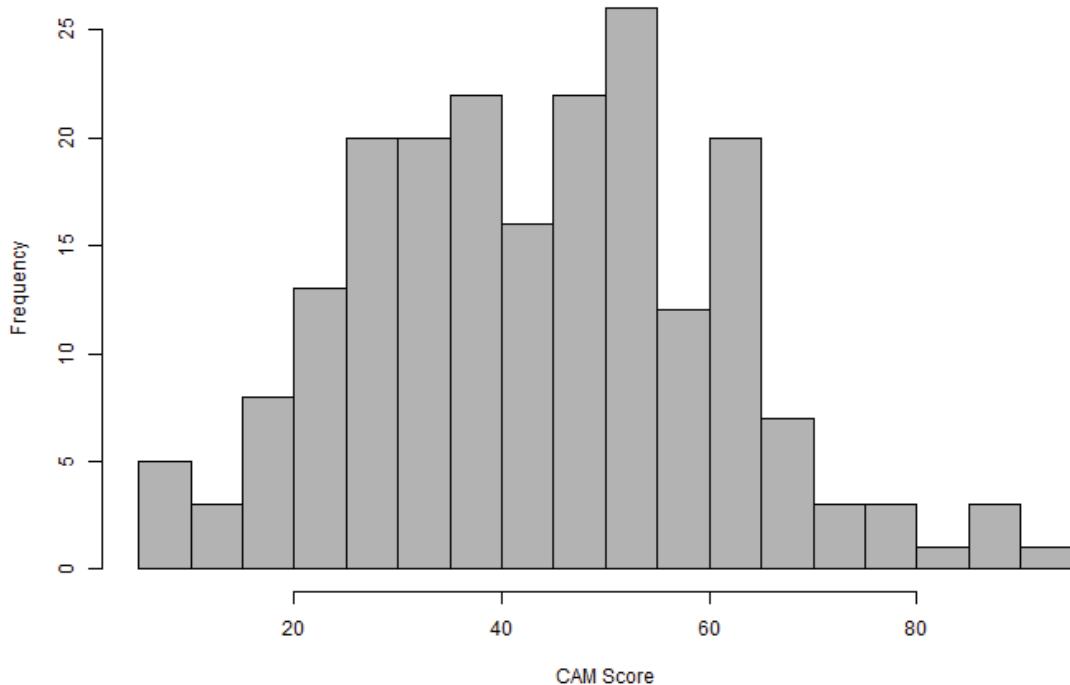
Results from the Greenfield CAM are buttressed by the collateral assessments of the original appraisals performed by Recovco. Recovco concluded that 95.54% of the sample of Nomura Appraisals it evaluated include discrepancies that rendered the

---

[172]   Appendix 5-1, Credibility Modeling Data and Scoring; Appendix 5-2, GLNs Where Valocity Data Were Not Collected.

102

appraisal non-credible and an additional 4.00% contain discrepancies that raised serious

questions about the credibility of the appraisal.[173]

---

[173]   *See infra*, Section 6.

6.   Collateral Reviews

In addition to assessing the credibility of the Nomura Appraisals through an

inspection and scoring methodology, I also had them reviewed by Recovco.[174]

Recovco's analysts, each of whom is or has been a licensed, certified, or assistant

appraiser and possesses a strong knowledge base in collateral review and underwriting,

performed a detailed analysis of the original appraisals for the sample Nomura properties.

The original appraisals were analyzed for accuracy in reporting original appraisal data,

preparing the appraisal analysis (*e.g.*, application of and scope of adjustments),

reconciling data and analysis to produce a valuation conclusion, and adherence to

industry standard requirements for appraisal standards and compliance (*i.e.,* USPAP,

Fannie Mae, and industry standard guidelines).

The Recovco analysis used the original appraisal reports from the loan files;

RealQuest subscription property data; and publicly available data, such as photographs,

maps, property descriptions, and local tax assessor data. The reporting of the Recovco

collateral analysis consisted of the findings of non-conformance, errors, and deficiencies

with specific details given for USPAP violations and Fannie Mae guideline violations, as

well as other errors and omissions in performance.[175]

Based on the findings, Recovco assessed the credibility of the appraisals

according to their in-house categorization of appraisals as weak (marked 1), moderate

---

[174]   The Recovco sample consisted of 202 sample Nomura properties that the
Greenfield AVM determined to be overvalued by more than one standard deviation from
its objective valuation.

[175]   The USPAP and Fannie Mae standards used for violations were applicable at
the appraisals' respective effective date. Although Recovco did not specifically use
Freddie Mac guidance, the Fannie Mae and Freddie Mac Selling Guides are similar; and
therefore, the result of a collateral analysis based on each guide would be similar as well.

(marked 2), or strong (marked 3). An appraisal marked 1 indicates a weak, non-credible

appraisal. An appraisal marked 2 for moderate is one that contains discrepancies severe

enough to cast substantial doubt on credibility. An appraisal marked 3 indicates a strong

appraisal without significant discrepancies. If an appraisal contained a USPAP violation,

Recovco classified it as no better than moderate (2), recognizing that any violation of

these binding requirements undermines the appraisal's credibility. Appraisals classified

as weak (1) contained still further discrepancies. In general, additional findings that

drove appraisals from moderate (2) to weak (1) were those that had significant impact on

the final value (*e.g.,* missing adjustments, failure to report external obsolescence or

adverse influences, and incorrect or inconsistent adjustments).[176]

This collateral review served two purposes. First, for the Nomura properties

subject to review, I obtained independent validation of the credibility of the original

appraisal. Recovco's analyses, in this regard, were purposely completed blindly,

meaning Recovco had no knowledge of either Greenfield AVM values or CAM scores

for the subject appraisals. Second, I was able to confirm further the accuracy of the

Greenfield CAM results. The Recovco collateral reviews confirmed the Greenfield CAM

results, indicating that 95.54% of the 202 Nomura Appraisals demonstrated significant

discrepancies indicative of a non-credible appraisal.

Based on Recovco's detailed collateral analysis, I obtained an independent and

qualified source of reviewers to confirm the fraction of the Nomura Appraisals that were

non-credible, (*i.e.,* indications that an appraisal was not performed by an appraiser in

---

[176] This rating system is one that Recovco and its senior appraisers have used
since June 2009.

conformance with USPAP and reasonable appraisal practices at the time). The egregious quality of the original appraisals is so ubiquitous that, even considering the presence of some properly conducted appraisals within the sample, when considered as a whole, the sampled Nomura Appraisals utterly lack credibility.

> A.   Recovco Process

Recovco focused on several key elements, including (but not limited to):

- Reporting and inclusion of location and external factors influencing value (*e.g.,* location next to or near commercial property, highways, train tracks, industrial sites).

- Accurate reporting and analysis of prior sales of the subject and/or comparable sales used in the report.

- Accurate and consistent analysis and reporting of current listing of the subject property.

- Accurate and consistent reporting of neighborhood market trends.

- Accurate and consistent reporting of the subject neighborhood (*i.e.,* neighborhood boundaries, neighborhood description and characteristics).

- Inclusion of analysis of any agreement of sale, option, or listing of the subject current as of the effective appraisal date.

- Proper summary and support for conclusion of the highest and best use of the subject property.

- Consistent and accurate reporting of physical details of the subject property throughout the report (*i.e.,* room counts, site area, condition ratings, basement areas and finished areas, amenities, etc.).

- Consistency, completeness, and accuracy of adjustments applied to comparable sales. Examination for missing adjustments, incorrectly applied adjustments, inconsistent adjustments, errors in adjustments, etc.

- Appropriate commentary for comparables selected from outside the subject neighborhood boundaries, comparables sold beyond a 6-month period, lack of bracketing of major elements of comparison to the subject (across the board adjustments).

- Discussion of subject property's sale price or value estimate, if beyond the range of age or price for the neighborhood.

- Commentary addressing the use of comparables beyond a reasonable proximity to the subject (1 mile [urban], 3 miles [suburban], and 5 miles [rural]).

- Appropriate commentary addressing the use of comparables exceeding a reasonable gross living variance as compared to the subject (10% gross living area ("GLA") variance).

- Reporting and explanation of excessive adjustments to comparables (standard 15% net and/or 25% gross adjustment guidelines, and 10% individual line adjustments).

- Reconciliation of the applicability or suitability of the approaches used to arrive at the value conclusion. Inclusion of a summary of the information, procedures, and reasoning used to support the analysis, opinions, and conclusions.

- Commentary regarding omission of an approach to value (an exclusion of the sales comparison approach, cost approach, or income approach must be explained where required).[177]

- Support for the components of the income approach (for income producing properties).

- Overall completeness of the sales adjustment grid, income approach, or cost approach sections.

In the Recovco analysis report, a finding was entered when an appraisal had

deficiencies in reporting that were errors, omissions, or non-compliance with USPAP,

Fannie Mae, and industry standard guidelines. These findings were then tied to specific

USPAP and Fannie Mae guidelines, where applicable.

---

[177]   The Recovco analysis did not include a review of the cost approach, its particular elements, or the site value to total value ratio. The scope of the analysis did not include any third party verification of market trends and the analysis of market trend reporting was limited to facts reported within the body of the appraisal report itself. In addition, the scope of the analysis did not include analysis of comparables or potential comparables beyond those contained in the original appraisal report. Although Recovco's reports identified numerous items that affect the value opinion, the accuracy of the value opinion in the appraisal was not otherwise analyzed.

The Recovco analysis report also included additional findings comments that were entered as supplemental details within the context of the analysis. These items, which can be found in Appendix 6-1a Recovco Collateral Analysis, generally were noted when an appraisal departed from common and reasonable appraisal practice and generally accepted underwriter guidelines without reasonable explanation or rationale. In general, these additional findings comments were not tied directly to a USPAP or Fannie Mae Selling Guide violation, but were relevant to the overall completion of the appraisal report and its credibility. For example:

- Comparables were used which all differed in style from the subject without explanation.

- Comparables that were located either next to or across the street from or on the same street as the subject were used but did not support the value estimate.

- A major element of comparison or amenity for the subject was not bracketed by the comparables resulting in across the board adjustment for that item (*e.g.,* site area, living area, basements, location, garages, and significant property amenities).

- The value opinion exceeded 15% of the predominant neighborhood price without explanation or rationale.

The importance and relevancy of adherence to USPAP by an appraisal cannot be overstated in the case of the sample analyzed by Recovco. According to the preamble statement in USPAP, "Compliance with USPAP is required when either the service or the appraiser is obligated to comply by law or regulation, or by agreement with the client or intended users." To meet State licensing and certification requirements, an appraiser must successfully pass an initial National USPAP education requirement and then maintain an ongoing updated education for USPAP for each license renewal period.

Furthermore, the Appraiser's Certification page contained in each one of the appraisal reports analyzed clearly states that the appraisal was prepared, "in accordance with the requirements of [USPAP]."

Although the USPAP violations may seem to be of a technical consequence, they absolutely call into question the validity and credibility of the appraisal report. An appraisal prepared in breach of the legal requirements of the profession is not only in violation of State licensing requirements and the appraiser's own certification, but in almost all instances, it is in violation of the contractual obligations for sale of the loan on the secondary market.

Similar with the scoring of the appraisals inspected in the previous exercise, Recovco scored each appraisal on a 1, 2, 3 ranking scale, as a measure of credibility. An appraisal scored 1 indicates a weak, non-credible appraisal. Appraisals scored 2 indicate an appraisal that contains discrepancies severe enough to cast substantial doubt on credibility. Appraisals scored 3 indicate a strong appraisal without significant discrepancies. If an appraisal had USPAP violation(s), it was classified as a 2 (moderate) at a minimum; this recognizes that any violation of these regulations undermines the appraisal's credibility. The rating of "moderate" was extended to weak based on the addition of other findings as well as the impact on report credibility of those findings. In general, the addition of findings that drove the rating from a 2 (moderate) to a 1 (weak) were those that did or could have an impact on the final value (*e.g.,* missing adjustments, failure to report external obsolescence adverse influences, or incorrect or inconsistent adjustments).

Of the 202 files reviewed, only 1 (0.50%) scored a 3, evidencing no significant

problems, whereas 193 (95.54%) scored a 1, which indicates a non-credible appraisal.

This is highly consistent with the findings of the Greenfield CAM, discussed in Section 5.

B.   Detailed Evaluations by Recovco Reviewers

In addition to validating the Greenfield CAM, the Recovco analysis also offered

an opportunity to evaluate particular appraisals and issues highlighted by the reviewers.

Recovco analyzed the facts available to the original appraisers and the analyses

conducted by those appraisers, including the information presented, methodological

choices, analytic decisions (*e.g.*, size and scope of adjustments), and development of

conclusions. Based on their findings, the following is a selection of the categories of

discrepancies and the significance to a reasonable appraiser adhering to applicable

standards and guidance at the time.[178]

i.   Failure to Consider and Analyze Prior Sales of the Subject and the
        Comparables

In several of the original appraisals for the sample Nomura properties,[179] the prior

sales data (within 3 years for the subject, within 1 year for the comparables) were not

reported and analyzed. More commonly, though, such sales were reported on the

---

[178]   A complete list of the credibility issues found in the 202 collateral reviews
performed by Recovco are provided in Appendix 6-1a, Recovco Collateral Analysis. For
support materials see Appendix 6-1b, Recovco Supporting Materials.

[179]   This was evidenced in numerous loan files. *For example*, in loan files
NHELI_2006_HE3_2001846452, NHELI_2007_1_2001856683, and
NHELI_2007_1_2002019475, the appraiser failed to either report or analyze prior sales
of the subject within 3 years; in loan files NHELI_2006_FM2_2002204821,
NHELI_2006_FM1_2002167725, and NHELI_2006_FM2_2002174641, the appraiser
failed to analyze the recent prior sales of comparables used in the appraisal report.

appraisal but were not analyzed or considered in the sales adjustment process as was

required by recognized appraisal standards.

As discussed in USPAP Advisory Opinion 1 (AO-1),

> The requirement for the appraiser to analyze and report sales history and
> related information is fundamental to the appraisal process… the
> appraiser's failure to analyze and report these facts may exclude important
> information from the sales comparison approach. Information pertaining
> to the current market status and the sales history of the subject property
> may also be useful information for the determination of highest and best
> use or the analysis of market trends.

As described above, reporting and analysis of prior sales is a key element in the

appraisal process. A "repeat sale" matched pair provides a direct measure for market

conditions adjustments.[180] An appraiser should be aware if they are comparing the

current sale of a subject or the most recent sale of a comparable to a prior sale and the

comparison shows that the annualized price increase is disproportionate to the overall

market conditions observed in the market analysis section of the appraisal. At minimum,

the discrepancy may indicate problems with the dwelling at the prior sale (*e.g.*, structural

defects). At the worst, the discrepancy may indicate illegal flipping.[181] Furthermore,

---

[180]   These sorts of "repeat sales" give clear indication of the market conditions changes over time. *See, e.g., Appraisal of Real Estate* at 454 (12th ed., 2001); *see also* F.T. Wang & P.M. Zorn, *Estimating House Price Growth with Repeat Sales Data* at 4 (Freddie Mac Working Paper, Dec. 13, 1999).

[181]   In 2003, HUD issued a rule prohibiting "property flipping," which it defined as "the practice whereby a property recently acquired is resold for a considerable profit with an artificially inflated value, often abetted by a lender's collusion with the appraiser." 68 Fed. Reg. 23,370 (May 1, 2003). *See also* FBI training video, "Illegal Property Flipping," *available at* http://www.fbi.gov/news/videos/property-flipping.

both USPAP and the Fannie Mae Selling Guide require the reporting and analysis of the

subject property's sale history.[182]

A reasonable appraiser should analyze these transactions, comparing indications

of market conditions from the repeat sale matched pairs to those determined in the overall

market analysis. Additionally, an appraiser should analyze the prior sale of the subject

and the prior sales of comparables as additional data and support for market conditions.[183]

Despite the importance of this requisite analysis to a reasonable appraiser, I found

no evidence of the appraisers performing this analysis in the sample of Nomura

---

[182]   In developing a real property appraisal, an appraiser must: (b) analyze all sales of the subject property that occurred within the three (3) years prior to the effective date of the appraisal. USPAP 2005 S.R. 1-5(b). The Fannie Mae Selling Guide proceeds to note that:

> When a new appraisal is required for a mortgage loan that a lender delivers to Fannie Mae, we expect lenders to perform an underwriting analysis of: (1) the current contract for sale for the subject property for purchase money transaction; (2) the current offering or listing for sale for the subject property for both purchase and refinancing transactions (if applicable); (3) the current ownership for the subject property for both purchase and refinance transaction; and (4) the sale (or transfer) history of the subject property, and comparable sales for both purchase and refinance transactions.

> We require the lender's appraiser to perform the initial analysis based on data researched and analyzed as part of the appraisal process. Our appraisal report forms and the Uniform Standards of Professional Appraisal Practice require the appraiser to analyze and report on any current contract for sale, offering or listing for sale, and recent prior sales (or transfers) of the subject property.

Fannie Mae 2006 Selling Guide, Part XI: Property and Appraisal Guidelines XI, Chapter 4: Reviewing the Appraisal Report (11/08/04).

[183]   These sorts of "repeat sales" give clear indication of the market conditions changes over time. *See, e.g., Appraisal of Real Estate* at 454 (12th ed., 2001); *see also* F.T. Wang & P.M. Zorn, *Estimating House Price Growth with Repeat Sales Data* at 4 (Freddie Mac Working Paper, Dec. 13, 1999). *See generally* Andy Krause & Max Kummerow, *An Iterative Approach to Minimizing Valuation Errors Using an Automated Comparable Sales Model*, 8 J. of Property Tax Assessment and Admin. 39 (2012).

Appraisals I reviewed. Further, even those appraisers who reported prior sales of subjects and comparables consistently failed to address the implications of significant price changes.[184]

        ii.   Overreaching with Comparables

A reasonable appraiser should rely on comparable sales that are actually comparable to the subject property.[185] That is, when a potential buyer is in the market for a home, that buyer should view the subject and the comparables as offering similar characteristics and elements of comparison. A small amount of variation is expected, so the appraiser should seek out comparables that "bracket" the subject in elements or items of comparison.[186]

Furthermore, both USPAP and the Fannie Mae Selling Guide issue specific requirements regarding the appropriate use of comparable properties.[187]

---

[184] *See, e.g.*, NAA_2005_AR6_1001976406, NHELI_2007_3_2001859293, and NHELI_2007_1_2002019475.

[185] For a simple discussion of the necessary conditions for a comparable, *see* Freddie Mac Appraisal Review Reminders (Oct. 2010).

[186] For a good discussion of this during the period of the original appraisals, *see* HUD Handbook 4150.2 Valuation Protocol, January 2006.

[187] USPAP states that:

> In developing a real property appraisal, an appraiser must: (a) be aware of, understand, and correctly employ those recognized methods and techniques that are necessary to produce a credible appraisal; (b) not commit a substantial error of omission or commission that significantly affects an appraisal; and (c) not render appraisal services in a careless or negligent manner, such as by making a series of errors that, although individually might not significantly affect the results of an appraisal, in the aggregate affects the credibility of those results.

S.R. 1-1(a)-(c); *see also* Fannie Mae 2006 Selling Guide Part XI: Property and Appraisal Guidelines, 406: Sales Comparison Approach to Value (01/31/06); *Id.* Part XI,

Collateral Reviews

The subject property is the standard against which the comparable sales are evaluated and adjusted. Thus, if an item in the comparable property is superior to that in the subject property, a negative adjustment is required to make that item equal to that in the subject property. Conversely, if an item in the comparable property is inferior to that in the subject property, a positive adjustment is required to make that item equal to that in the subject property. If an item in a comparable property is equal to that in the subject property, no adjustment is required.

Based on the findings, numerous appraisals for the sample Nomura properties appeared to over-reach on comparables that were significantly superior to the subject property. By over-reach, I mean that rather than demonstrating that these comparables were all superior to the subject (and thus the sales prices of the comparables should be adjusted *downward* to accommodate this superior/inferior relationship), the original appraiser did not account for the difference in a value indicating item as compared to the subject.[188]

In several examples, appraisers used properties that fronted substantially valuable amenities as comparables, but no adjustment was made for the missing amenity in the subject Nomura property. For example, properties that had significantly larger site areas were used as comparables for properties with much smaller lots but no downward adjustment was made to the subject Nomura property appraisal.[189] Several subjects either

---

Chapter 4: Reviewing the Appraisal Report (11/08/04); *Id.* Part XI, 406.03: Adjustments to Comparable Sales (06/30/02).

[188] *See*, *e.g.*, NHELI_2007_3_2001932287, NHELI_2007_1_2002019475, NHELI_2006_HE3_200217456, and NAA_2005_AR6_1002195590.

[189] *See*, *e.g.,* NHELI_2006_HE3_2001846528, NHELI_2007_2_2001857532, NHELI_2007_3_2001859293, and NHELI_2006_FM2_2001905280.

backed-up or fronted on industrial, commercial, or other adverse influences such as highways or train tracks, but comparables without such disamenities were used in the sales adjustment process.[190] Additional examples of overreaching with comparables include failure to adjust for items such as living areas, age differences, superior basement amenities, when present in the comparables; age differences ignored,[191] and failure to adjust for superior bathroom amenities in the comparables as compared to the subject.[192]

           iii.   Failure to Accurately Define the Subject Neighborhood

According to USPAP as well as the Fannie Mae Selling Guide requirements, an appraisal must accurately identify the neighborhood where the subject property is located.[193]

Property location is a fundamental characteristic that influences the value of residential real estate and, therefore, is a critical factor that must be considered in the appraisal process. Neighborhood characteristics and trends also influence the value of one-family to four-family residences; therefore, they are also key elements in the appraisal process.

---

[190]   *See*, *e.g.*, NHELI_2006_FM2_2001905280, NHELI_2006_FM1_2002006329, NHELI_2007_2_2002182248, and NHELI_2007_2_2002212289.

[191]   *See*, *e.g.,* NHELI_2006_FM2_2001835967, NHELI_2006_FM2_2001911867, and NHELI_2007_3_2001932287.

[192]   *See*, *e.g.,* NAA_2005_AR6_1001918593, NAA_2005_AR6_1002171703, and NHELI_2006_FM1_2001901904.

[193]   USPAP, S.R. 1-2(e)(i) ("In developing a real property appraisal, an appraiser must: (e) Identify the characteristics of the property that are relevant to the type and definition of value and intended use of the appraisal, including: (i) its location and physical, legal, and economic attributes."); Fannie Mae 2006 Selling Guide, Part XI: Property and Appraisal Guidelines, Chapter 4: Reviewing the Appraisal Report (11/08/04); *Id.* Part XI, 403: Neighborhood Analysis (06/30/02).

Appraisal report forms and guidelines do not require the appraiser to rate or judge the neighborhood. Appraisers are required, however, to perform an objective neighborhood analysis by identifying (1) neighborhood boundaries, (2) neighborhood characteristics, and (3) the factors that affect the value and marketability of properties in the neighborhood.[194]

Recovco's analysis found numerous cases where the appraisal failed to identify the relevant neighborhood characteristics for the subject property, such as the neighborhood boundaries.[195]

    iv.   Failure to Correctly Identify Neighborhood Market Trends

USPAP and the Fannie Mae Selling Guides require that an appraisal correctly and accurately identifies and reports the market trends for a neighborhood as defined in the appraisal:

> Market Data Research: The appraiser is responsible for adequately researching market data from all reasonably available and appropriate

---

[194] *Fannie Mae Single Family 2006 Selling Guide, Part XI: Property and Appraisal Guidelines, XI, Chapter 4: Reviewing the Appraisal Report (11/08/04), XI, 403: Neighborhood Analysis (06/30/02)* describes these three factors:

- Neighborhood boundaries. These can be identified by various physical characteristics (streets, bodies of water, land uses, types of dwellings, etc.).

- Neighborhood characteristics. These can be addressed by the types of structures and architectural styles in the neighborhood (detached, attached, row or townhouse, colonial, ranch, Victorian, etc.); current land use (single-family residential, commercial, industrial, etc.); typical site size (one-eighth acre, two acres, etc.); or street patterns or design (one-way street, cul-de-sac, court, etc.).

- Factors that affect the value and marketability of properties in the neighborhood. These can be addressed by such things as the proximity of the property to employment and amenities, employment stability, appeal to the market, changes in land use, access to public transportation, adverse environmental influences, etc.

[195] *See, e.g.,* NHELI_2006_FM2_2001987014, NHELI_2007_1_2002019140, and NHELI_2007_1_2002019940.

sources of information for the location and property type being appraised (including public records transfer information and, if appropriate, data from local real estate brokers who are not active in the local multiple listing service)—even if this results in the appraiser spending more time and incurring additional expenses in performing appraisal assignments in certain geographic locations or for particular property types. If the appraiser does not consider all relevant data, overlooks relevant data sources, or relies on incomplete data in the research and analysis stage of the appraisal process, the result may be a poor quality appraisal that could have a discriminatory effect.[196]

Data presented in the Recovco analysis establishes numerous examples where the neighborhood market trends were either reported in clear conflict within the appraisal[197] or were altogether misrepresented.[198]

C.   Comparison of Recovco and Greenfield Reviews

Of the Nomura Appraisals determined to be non-credible (score of 20) by the Greenfield CAM, 88.12% were also determined to be "Weak" via Recovco's analysis.

I also examined the results from Recovco's analysis for Nomura Appraisals that were either "Weak" or "Moderate" (*i.e.,* not "Strong" enough to be used for mortgage lending reliance). Of the appraisals evaluated by Recovco, 99.54% scored in these two categories, indicating that about 1 in 200 of the overstated Nomura Appraisals could be used without significant rework in a mortgage loan underwriting, notwithstanding its overstatement of value.

---

[196]   Fannie Mae 2006 Selling Guide, Part XI: Property and Appraisal Guidelines, Chapter 4: Reviewing the Appraisal Report (11/08/04); *Id.* Part XI, 402: Market Data Research (08/24/03); *see also* USPAP S.R. 1-1(a)-(c).

[197]   *See, e.g.*, NHELI_2007_3_2001856721, NHELI_2007_1_2002148508, and NHELI_2007_1_2002211714.

[198]   *See, e.g.*, NHELI_2006_HE3_2001918073, NHELI_2006_HE3_2001919867, NHELI_2007_2_2001930021 and NHELI_2007_3_2002178744.

In Table 6-1, I summarize the Recovco findings, the Greenfield findings, and the correlations between the Recovco and Greenfield findings. Recovco's model classifies any appraisal that was not "Strong" (*i.e.,* "Weak" + "Moderate") as insufficient to support a mortgage loan underwriting. Under the more conservative Greenfield scoring model, this corresponds to a score of 20 or more.

Table 6-1. Comparison of Greenfield and Recovco Scoring

		Greenfield Score ≥ 20
		92.20%*
Recovco Weak	95.54%	88.12%#
Recovco Weak + Moderate	99.54%	92.08%#

* Fraction of 202 assessed by Recovco.
# Common fraction of 202 assessed by Recovco.

As Table 6-1 indicates, a large majority of the appraisals determined to be "Weak" by Recovco have a credibility score of 20 or higher. Therefore, even a relaxation of the credibility threshold (*i.e.,* giving the appraiser the benefit of the doubt) shows a very high percentage of non-credible appraisals.

Second, I also examined whether (1) any appraisals were both scored higher than 20 (non-credible) by the CAM and scored as "Strong" by Recovco, or (2) any appraisals were both scored less than or equal to 20 by the CAM and scored as "Weak" by Recovco. In my investigation, none of the appraisals (0.00%) scored both greater than or equal to 20 on my credibility scale and were scored "Strong" by Recovco. This result is in fact a far lower incidence than would be statistically expected.[199] There were also 15 appraisals

---

[199]   In the statistical analog, even at a 90% confidence level one would expect 5% of properties to fall outside the range on either side. J.T. Stocks, *Review of Basic Statistics* (Memphis State University, 1999), https://www.msu.edu/user/sw/statrev/strv58.htm.

that were determined to be "Weak" by Recovco but did not exceed the credibility threshold in my scoring model.[200]

D.   Examination of Credible Appraisals

To further validate the findings of my scoring model, I also reviewed several appraisals that were scored as "credible," that is, which had scores of less than 14.13. My findings are detailed in Appendix 6-2, Examination of Credible Appraisals.

---

[200]   Based on a review of some of the results from the Recovco collateral analysis, it appears that the difference in the Greenfield CAM and Recovco determinations on credibility for these appraisals was due to the different assessments performed. These appraisals contained discrepancies related to, among other things, land-to-value ratio and comparables—categories that Recovco did not check for, but the Greenfield CAM did.

7.   Client Pressure Gave Rise to Non-Credible Appraisals

While it is not my role to opine as to what motivated any specific appraiser to

issue an inflated value or conduct an appraisal without credible support on a sample

Nomura property, there is significant evidence in the appraisal literature and community

that appraisers were under significant pressure to issue biased appraisals during the

relevant time period. Indeed, as I detail below, a number of appraisers who conducted

the original appraisals on the sample Nomura properties petitioned the Appraisal

Subcommittee for relief from pressure related to bias. While I am not permitted to draw

a conclusion that this pressure or bias resulted in the inflated non-credible appraisals and

values, I believe a fact finder could reasonably conclude this to be the case.

A.   Academic and Professional Literature

A significant body of research indicates that during the relevant time period,

although strictly prohibited by USPAP, clients—principally lenders—pressured

appraisers to inflate their opinions of market value.[201] As discussed in my accompanying

---

[201]   Based on my own experience in the field and contact with other appraisers, loan officers were able to apply pressure along a spectrum. On one end of the spectrum, a loan officer could simply mention the desired value and the implication was that failure to hit that value would result in the appraiser being blacklisted. Some loan officers were more direct with their expectations and simply told the appraisers to call them if they could not hit a specific value. At that point, the appraisers would be encouraged to make it work (*i.e.*, hit value) or be replaced by someone that would. Incidents have also been reported of "fishing for value," which can manifest in several ways. For example, a lender may send out an appraisal assignment to multiple appraisers, and the first appraiser to say that he or she could "hit" value would get the assignment. Alternatively, a client (often the lender) hoping for a certain value may request things like "comp checks," where additional comps are often suggested, or other requests are made to arrive at a certain value.

report, false LTV ratios present latent risks to lenders and borrowers alike. To address

this question, Cho and Megbolugbe focused on the "moral hazard issues of appraisal."[202]

> That is, the buyer and seller have a vested interest in completing a transaction. Loan originators have a vested interest in completing a transaction. No sale means no income for the originators or real estate agent. The appraiser understands the financial implications of having no transactions and, at the same time, wants repeat business via referrals. Accordingly, real estate agents, buyers, originators and appraisers have aligned interests: to complete and close the transaction. The way to ensure the deal is to appraise slightly high. The appraiser asks or receives the transaction price and then adds a bit to it. Since mortgage lenders do employ the minimum of sales price or the appraisal, whichever is lower, in determining the loan value, no further information is added because of the appraisal. *Therefore, it is only the carriers of the default risk who lose in the transaction.*[203]

As both the incentive and capability to inflate appraised values grew, appraiser

pressure surged.[204] A 2004 study by Diaz and Hansz of single-family home appraisals in

Texas examined whether pressure through client-appraiser interactions systematically

---

[202]   Man Cho & Isaac F. Megbolugbe, *An Empirical Analysis of Property Appraisal and Mortgage Redlining*, 13 J. Real Estate Fin. & Econ 45, 46 (1996).

[203]   *Id.* (emphasis added).

[204]   In addition to misrepresentations on financial instruments, appraisal pressure has resulted in outright fraud.

> An appraisal is an opinion of value, which makes it difficult to show that the appraiser intended to deceive someone…. Appraisers are not usually the originator of fraud schemes but are brought into it with the promise of future assignments instead of large payments, which would provide the smoking gun tying them to the fraud.

See Appraisal Oversight, The Regulatory Impact on Consumers and Business: Before the Subcomm. on Insurance, Housing and Community Opportunity of the H. Comm. on Fin. Servs., 112th Cong. 7, 11 (2012) (statement of Donald T. Rodgers, President, Association of Appraiser Regulatory Officials) [*hereinafter* Rodgers Statement].

Confidential   Client Pressure Gave Rise to Non-Credible Appraisals

biases the valuations of appraisers.[205] In the paper about this research published in 2010,

Diaz and Hansz concluded that residential mortgage originators, whose compensation is

contingent upon originating loans, have an incentive to influence appraisers, and that this

pressure, applied through expressing client concerns, actually influences the valuations of

appraisers.[206] Conversely, appraisers who were not exposed to client concerns provided

unbiased estimates.[207] Diaz and Hansz summarized these harmful practices:

> Because appraisals are used to estimate borrowers' equity, over-valuation
> of collateral results in under-estimation of default risk.   Originators
> typically pass on this inflated risk by selling residential originations to
> secondary mortgage market agents, such as Fannie Mae and Freddie Mac.
> By reaping the benefits while bearing little of the costs, loan originators
> have a strong motivation to quietly maintain a system of appraisal
> incentives/pressures that frustrates underwriting standards, overprices
> mortgage-backed assets, fuels speculative bubbles, and misrepresents the
> level of risk assumed by the investing community thereby setting markets
> up for the next financial disaster.[208]

> Under these conditions, default risk [is] significantly underestimated and
> passed on to the investment community via the wholesaling channel and
> secondary mortgage market....[209]

Other studies reinforce that appraiser pressure was a national problem at the time.

From 2003 to 2006, October Research, LLC, a leading source of news and analysis in the

real estate sector, undertook perhaps the most comprehensive survey on appraiser

pressure to date. The survey indicates that 90% of appraisers felt pressure to restate,

---

[205]   Julian Diaz III & J. Andrew Hansz, *A Taxonomic Field Investigation into Induced Bias in Residential Real Estate Appraisals*, 14 Int'l J. Strategic Property Mgmt. 3 (2010).

[206]   *Id.* at 3.

[207]   *Id.* at 15.

[208]   *Id.* at 3.

[209]   *Id.* at 15.

Confidential   Client Pressure Gave Rise to Non-Credible Appraisals

adjust, or change property valuations during this time, which represents a 64% increase

from a corresponding 2003 survey.[210]

> 96% of respondents felt that appraisers in their market, when pressured to
> restate/adjust/change values, did modify property values. When refusing
> to change a property valuation, 75% of respondent appraisers indicated
> that their business was negatively affected. 68% of appraisers who
> refused to restate/adjust/change a property value lost the client, while
> almost half of the appraisers did not get paid for the appraisal (45%).[211]

> Appraisers seeking to avoid inflated results faced particular pressure. The

October Research Survey indicates not only that appraisal pressure was rampant during

the relevant time, but also that the consequences for appraisers refusing to accede to this

pressure were harsh:

> 87% of appraisers who refused to restate property values and were
> removed from an "Approved Appraisers List" did not receive advanced
> warning. Half of the appraisers indicated that they were removed from an
> "Approved Appraisers' List" because they did not meet the value
> requested by the client. More than 85% of the appraisers removed from an
> "Approved Appraisers' List" were unsuccessful in being reinstated.[212]

B.   Firsthand Accounts

In response to this pressure, approximately 11,000 appraisers petitioned the

Appraisal Subcommittee for assistance.[213] According to the petition, "lenders (meaning

any and all of the following: banks, savings and loans, mortgage brokers, credit unions

and loan officers in general; not to mention real estate agents) have individuals within

their ranks, who, as a normal course of business, apply pressure on appraisers to hit or

---

[210]   October Research Corp., *National Appraisal Survey, Appraisal Business Practices* 5 (2007) [hereinafter *October Research Survey*].

[211]   *Id.* at 6.

[212]   *Id.* at 6.

[213]   By 2007 this petition had 10,500 signatures.

Confidential   Client Pressure Gave Rise to Non-Credible Appraisals

exceed a predetermined value."[214]   According to the petitioners, the pressure came in

different forms, including:

- the withholding of business for refusing to inflate values;

- the withholding of business for refusing to guarantee a predetermined value;

- the withholding of business for refusing to ignore deficiencies in the property; and

- blacklisting honest appraisers in order to use "rubber stamp" appraisers.[215]

I found at least 35 instances where appraisers who signed the petition completed

appraisals on Nomura properties. Of this 35, I identified 33 different appraisers who

signed the petition protesting pressure to modify appraisal value conclusions.[216]

Interestingly, from this pool of 35 appraisals completed by signers of the petition, I also

had information from the CAM to assess the credibility of 11 of these appraisals. I found

that 10 out of 11 (90.91%) were deemed non-credible by the CAM (*i.e.,* above the

threshold of 20). While appraisers may have signed the petition for a variety of reasons,

the fact that so many of the Nomura property appraisers signed the petition is consistent

with my conclusions in this report, as well as the October Research report in 2007 that

found 56% of appraisers reporting some kind of pressure from lenders to alter their

valuations.

---

[214]   Concerned Real Estate Appraisers from across America, Appraisers Petition, http://appraiserspetition.com/, last visited May 28, 2013).

[215]   *Id.*

[216]   *See* Appendix 7-1, Appraisers Who Signed ASC Petition and Appraised Sample Nomura Properties. To be conservative, some appraisers who matched the petition were not counted because of limitations on considering multiple licenses in states other than where the subject properties were located.

Confidential   Client Pressure Gave Rise to Non-Credible Appraisals

Firsthand accounts from appraisers during the period highlight the pressure by

lenders to "make value" or face being blacklisted.[217] Long-time Texas appraiser, Bob

Burnitt, for the Realty Times, lamented that during the period it was difficult for an

honest appraiser to get business.

> Sooner or later, I do an appraisal that doesn't 'make value' and that is it, I'm fired. Time and time again. During the so-called 're-fi boom' loan officers absolutely demanded that I either lie or inflate an appraisal for them. When I tell them I can't do that, it is unethical and illegal, they just hang up the phone and call my competition.[218]

This quote is consistent with my own observations in the field during this

period. Typically, the lender, mortgage broker, or realtor would first determine a

reasonable market value and then inflate by several percent.[219] If the first

appraiser refused to hit the value, new appraisers were hired until the value was

hit.[220] The pressure was not subtle either, appraisers regularly received requests

simply to "increase [the appraised value] to… make this loan work."[221]

---

[217]   Pressure even permeated to in-house appraisers at large lenders. One former appraiser at New Century stated that between 2004 and 2005 "there was instant notification to everyone as soon as you rejected a loan. And you dreaded doing it because you paid for it. Two guys would come with a bat, and they were all [ticked] off because you cut their deals." David Cho, *Pressure at Mortgage Firm Led to Mass Approval of Bad Loans*, Washington Post, May 7, 2007, at A01.

[218]   *See* Blanche Evans, *Sickened by Fraud, A Real Estate Appraiser Turns In His Pencil*, Realty Times, Jan.17, 2005.

[219]   *See also* Aubrey Cohen, *Home Appraisers Pressured to Fudge the Numbers*, Seattle Post-Intelligencer, July 30, 2007.

[220]   *See* Blanche Evans, *Appraisers Respond: Too Much Fraud In Lending,* Realty Times, Jan.19, 2005.

> I was fired from the last main mortgage broker client I had left when I would not bring a deal in $10K above what market value should have been, based on numerous good comparable sales. The Realtor, mortgage broker, and everyone else wanted the deal to close that [sic] the unrealistic price. The stubborn appraiser was the only road block. I noticed later that

Confidential   Client Pressure Gave Rise to Non-Credible Appraisals

For an appraiser, the ways to inflate an appraisal were simple enough. Without great difficulty, appraisers could falsify comp comparisons by overlooking characteristic differences; use seemingly appropriate comps, but from nicer neighborhoods; or not call a seller's agent to discover that in the comp's sales price were tens of thousands in closing cost assistance and escrowed repair funds that were not associated with the value of the property. "Another dubious practice [was]… [c]iting comps close to six-months-old—the limit by law—and ignoring recent ones that would show a local market's sudden turn for the worse."[222] These were precisely the types of errors observed in the Nomura sample appraisals.

---

it did finalize in the MLS - closing at the contract price on a VA loan. Wonder who they found to appraise it for that when all the market data said it should have been less? *Id.*

[221]   Glenn Setzer, *Appraisers Speak Out On Pressure, Fraud, and Reform*, Mortgage News Daily, May 11, 2005; *see also* Kenneth R. Harney, *Appraisers Under Pressure to Inflate Values*, washingtonpost.com, Feb. 3, 2007.

[222]   Yves Smith*, Real Estate Appraisers Pressured to Give Higher Valuations*, Naked Capitalism, Apr. 23, 2007.

Confidential   Certification that Report Complies with USPAP Requirements

8.   Certification that Report Complies with USPAP Requirements

        A.   General Assumptions

No responsibility is assumed for matters of legal nature affecting title to the properties,
nor is an opinion of title rendered.

Information and data furnished by others are usually assumed to be true, correct, and
reliable. When such information or data appears to be dubious and when it is critical to
the analysis, a reasonable effort has been made to verify all such information; however,
no responsibility for its accuracy is assumed by the appraiser.

It is assumed that there are no hidden or unapparent conditions of the properties, subsoil,
or structures that would render them more or less valuable. No responsibility is assumed
for such conditions or for engineering work that may be required to discover them.

It is assumed that all required licenses, consents, or other legislative or administrative
authority from any local, state, or national government or private entity or organization
have been or can be obtained or renewed for any use on which the value estimate
contained in this report is based.

It is assumed that the utilization of the land and any improvements is within boundaries
or property lines of the properties described and that there is no encroachment or trespass
unless noted within this report.

        B.   General Limiting Conditions

Possession of this report, or a copy thereof, does not carry with it the right of publication.
It may not be used for any purpose by any person other than FHFA and the party to
whom it is addressed.

No environmental impact studies were either requested or made in conjunction with this
analysis, other than as may be referenced in the report. Greenfield Advisors LLC hereby
reserves the right to alter, amend, revise, or rescind any of the value opinions based on
any subsequent environmental impact studies, research, and/or investigation.

No part of this report may be used as a part of or referred to in a public or private stock
offering.

Acceptance of and/or use of this report constitutes acceptance of the foregoing General
Assumptions and General Limiting Conditions.

The compensation for research services is dependent only on delivery of this report and is
not contingent on the estimates provided.

127

Confidential   Certification that Report Complies with USPAP Requirements

C.   Extraordinary Assumptions

Throughout my credibility analyses, I utilized publicly available databases of the kind commonly used by appraisers in the normal conduct of their work (e.g., Google Earth, various tax assessor databases, and other public information). Throughout this report, when such data is used, I assume that it is materially correct.

D.   Intended Use and Intended Users

The intended use of this report is to provide my opinions regarding the appraisals

associated with loans underlying the subject securitizations at issue in *Federal Housing*

Finance Agency v. Nomura Holding America, et al. The intended users of this report are

the Court, fact finders, parties to this litigation, and their agents, including FHFA; Fannie

Mae; Freddie Mac; Nomura; Quinn Emanuel Urquhart & Sullivan, LLP; and related

entities pursuant to legal action in this matter.

E.   Type and Definition of Value

The type of value is market value. For this analysis, I have applied the following

definition of market value, which is promulgated for federally insured lending and is

often referred to as the Federal Definition:

> Market value means the most probable price which a property should bring in a competitive and open market under all conditions requisite to a fair sale, the buyer and seller each acting prudently and knowledgeably, and assuming the price is not affected by undue stimulus. Implicit in this definition is the consummation of a sale as of a specified date and the passing of title from seller to buyer under conditions whereby:
>
> •   Buyer and seller are typically motivated;
> •   Both parties are well informed or well advised, and acting in what they consider their own best interests;
> •   A reasonable time is allowed for exposure in the open market;
> •   Payment is made in terms of cash in U.S. dollars or in terms of financial arrangements comparable thereto; and

Confidential   Certification that Report Complies with USPAP Requirements

- The price represents the normal consideration for the property sold unaffected by special or creative financing or sales concessions granted by anyone associated with the sale.[223]

F.   Highest and Best Use

Throughout this review report, I have adopted the highest and best use of each

subject property as determined in the original appraisal unless otherwise noted.

G.   Interests Appraised

Throughout this review report, I have presumed the fee simple interest in the

subject properties, unless otherwise noted.

H.   Certification

I certify that, to the best of my knowledge and belief:

- The statements of fact contained in this appraisal review report are true and correct.

- The reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions and are my personal, impartial, and unbiased professional analyses, opinions, and conclusions.

- I have no present or prospective interest in the properties that are the subject of this report and no personal interest with respect to the parties involved.

- I have performed no services, as an appraiser or in any other capacity, regarding the properties that are the subject of this report within the 3-year period immediately preceding acceptance of this assignment.

---

[223]   The Federal Definition is from regulations published by federal regulatory agencies pursuant to Title XI of FIRREA, between July 5, 1990, and August 24, 1990. 55 Fed. Reg. 27762, 27771 (July 25, 1990) (Federal Reserve System); 55 Fed. Reg. 30199, 30208 (July 25, 1990) (National Credit Union Administration); 55 Fed. Reg. 33879, 33888 (Aug. 20, 1990) (Federal Deposit Insurance Corporation); 55 Fed. Reg. 34219, 34228-29 (Aug. 22, 1990) (Resolution Trust Corporation); 55 Fed. Reg. 34532, 34547-48 (Aug. 23, 1990) (Department of the Treasury); 55 Fed. Reg. 34684, 34696 (Aug. 24, 1990) (Office of the Comptroller of Currency). This definition is also referenced in regulations jointly published by the OCC, OTS, FRS, and FDIC on June 7, 1994, and in the Interagency Appraisal and Evaluation Guidelines, dated December 10, 2010. Office of Thrift Supervision Integration Pursuant to the Dodd-Frank Wall Street Reform and Consumer Protection Act, 76 Fed. Reg. 48950, 49063 (Aug. 9, 2011).

Confidential   Certification that Report Complies with USPAP Requirements

- I have no bias with respect to the properties that are the subject of this report or to the parties involved with this assignment.

- My engagement in this assignment was not contingent upon developing or reporting predetermined results.

- My compensation for completing this assignment is not contingent upon the development or reporting of a predetermined value or direction in value that favors the cause of the client, the amount of the value opinion, the attainment of a stipulated result, or the occurrence of a subsequent event directly related to the intended use of this appraisal review.

- My analyses, opinions, and conclusions were developed, and this report has been prepared, in conformity with the *Uniform Standards of Professional Appraisal Practice*.

- I have not made a personal inspection of the properties that are the subject of this report.

- The following individuals provided significant professional assistance in the conduct of this appraisal review to the person signing this certification:

   Greenfield Advisors:

   - Gabriel Bolden
   - Sarah Hall
   - Sarah J. Kilpatrick
   - Andy Krause, Ph.D.
   - Clifford A. Lipscomb, Ph.D., MRICS
   - Hans Minea
   - Abigail Mooney
   - Kerry Mulvaney
   - Jonathan Putman
   - Jonathan Reiter
   - Linda Tayntor
   - Daniel Tetrick

   Data Entry Team:

   - Max Davidoff
   - Tiffany Dycus
   - Shanti Fitch

Confidential   Certification that Report Complies with USPAP Requirements

- Daniel Hardy
- Angel Hennings
- Salma Jibril
- Madonna Kilpatrick
- Mae Mendoza
- Tony Peters
- Kasia Rozanska
- George Ruth
- Amy Shackles
- Michael Schoentag
- Keivona Tucker
- Nate Ward
- Daniel Webster

Administrative Team:

- John Casker
- Lorena Dinger
- Denise Hemphill
- Isaac King
- David Knickerbocker
- Lisa Mc Sherry
- Stephanie McMillian

Additional Support:

- Roulac Global, LLC

- Researchers from Forsythe and Valocity (*see* Appendix 8-1, List of Researchers from Forsythe and Valocity)

- The reported analysis, opinions, and conclusions were developed and this report has been prepared in conformity with the Code of Professional Ethics and Standards of the Professional Appraisal Practice of the Appraisal Institute, of which I am an MAI Designated Member.

- The use of this report is subject to the requirements of the Appraisal Institute relating to review by its duly authorized representatives.

Confidential   Certification that Report Complies with USPAP Requirements

- As of the date of this report, I have completed the continuing education program of the Appraisal Institute.

GREENFIELD ADVISORS LLC

John A. Kilpatrick, Ph.D., MAI, FRICS

See Appendix 1-3 for Dr. Kilpatrick's Appraiser License Numbers by State

APPENDIX 2-1d

Omitted Due to Size

APPENDIX 4-1a

Greenfield CAM Code

Greenfield Advisors

Contents

1   Introduction

Master Control Module Code

```r
library(RODBC)
library(stringr)
library(shiny)
options(warn = -1)  # Removes warnings from printing out


# 0.2 Set Parameters
# ------------------------------------------------------------


NonOF <- FALSE  # Is this reading non OF or OF data?
SD.par <- 10  # X:1 Ratio in either direction signifies out of balance market
VT.par <- 0.04  # any market movement less than X% annually qualifies as stable
INC.par <- 0.02  # acceptable range for differences between appraiser comp
# values and researcher located comp values


# 0.3 Set the current case to evaluate
# ------------------------------------------


Case.Name <- "XXX"


# 0.4 Set Paths
# ----------------------------------------------------------------


# Set location to output result to
Output_Name <- paste0("M://Tranche X//", Case.Name, "//CAM//DataOutput_",
    str_replace_all(as.character(Sys.Date()), "[/]", "[_]"),
    ".txt")


# Set location where 6 input queries are located
```

1

CONFIDENTIAL

```r
input_Path <- paste0("M://Tranche X//AppraisalReviewDB_TX//",
    "AppraisalReviewDB_TX_Files//", "TrancheX_Manager.accdb")


# 1.0 Load in Data and Show Summary Stats
# -------------------------------------


# 1.1 Call to Data Reading Module
# -----------------------------------------------


# Open Read Data File and read in all the data
source("o://CAM//CAM_ReadData.R")


# Limit to those in the current case
RawData <- RawData[RawData$Case == Case.Name, ]


# Backup as AllRaw
AllRaw <- RawData


# 1.2 Show some stats on Data
# ---------------------------------------------------


# 1.2.1 Output Nbr of Records
print(paste0("Total Records in Data: ", dim(RawData)[1]))



# 1.2.2 Are there duplicates?
nbr.dup <- length(AllRaw$GlobalLoanNo[duplicated(AllRaw$GlobalLoanNo)])
print(paste0("There are ", nbr.dup, " Duplicates"))

if (nbr.dup > 0) {
    AllRaw$GlobalLoanNo[duplicated(AllRaw$GlobalLoanNo)]
}

# 1.2.3 If no duplicates, then give further information

if (nbr.dup == 0) {

    # Outputs nbr of observations missing comps DE
    temp.ga <- merge(RawData[, c("GlobalLoanNo", "AppraisalPurpose")],
        GAComps, by.x = "GlobalLoanNo", by.y = "GlobalLoanNo",
        all.x = T)

    print(paste0("Total Missing Appraisal Comp Data: ", dim(RawData)[1] -
        length(table(as.character(temp.ga$GlobalLoanNo[!is.na(temp.ga$Case)])))))
```

CONFIDENTIAL

```r
    # Print Missing
    print(rownames(table(as.character(temp.ga$GlobalLoanNo[is.na(temp.ga$Case)]))))

    # Outputs nbr of observations missing comps from FV
    print(paste0("Total Missing F /V Comp Data: ", dim(RawData)[1] -
        length(table(as.character(RawData$GAID))))))
}


# 2.0 Calculate questions
# -------------------------------------------------------


# 2.1 Call to Calculate Questions Module
# ----------------------------------------


source("o://CAM//cam_calcquestions.R")


# 2.2 Show some stats on Data
# ---------------------------------------------------


# Number of cleaned datas
print(paste0("Total Records in Cleaned Data: ", dim(SData)[1]))

# Find and print those that don't match
x.miss <- merge(AllRaw[, c("GAID", "GlobalLoanNo")], SData[,
    c("GlobalLoanNo", "LoanID")], by.x = "GlobalLoanNo", by.y = "GlobalLoanNo",
    all.x = T)
x.miss <- x.miss[is.na(x.miss$LoanID), ]
if (dim(x.miss)[1] > 0) {
    print(as.character(x.miss$GlobalLoanNo))
}


# Summary of Data
summary(SData)


# 3. Output Data
# ----------------------------------------------------------------


write.table(SData, Output_Name, sep = "\t", row.names = F)
```

CONFIDENTIAL

Code for Reading in Data.

```r
# 0.1 Load Libraries
# --------------------------------------------------------------

library(RODBC)
library(stringr)

# 1.0 Read in Data
# ----------------------------------------------------------------

# 1.1 Read in Raw Data
# ------------------------------------------------------------

# 1.1.1. Set up connect to ODBC Object
CM_odbc <- odbcConnectAccess2007(input_Path)

# 1.1.2 Read in Raw Data.  Different data is read whether
# we are doing objectively false properties (OF) or
# Non-objectively false (NONOF)

if (!NonOF) {
    RawData <- sqlQuery(CM_odbc, "SELECT * FROM qry_Scoring_SubjData",
        stringsAsFactors = FALSE)
}
if (NonOF) {
    RawData <- sqlQuery(CM_odbc, "SELECT * FROM qry_Scoring_SubjDataNonOF",
        stringsAsFactors = FALSE)
}

# 1.2 Read in Comp Data
# ---------------------------------------------------------

# 1.2.1 GA Comps from Appraisal
if (!NonOF) {
    GAComps <- sqlQuery(CM_odbc, "SELECT * FROM qry_Scoring_GA_CompsData",
        stringsAsFactors = FALSE)
}
if (NonOF) {
    GAComps <- sqlQuery(CM_odbc, "SELECT * FROM qry_Scoring_GA_CompsDataNonOF",
        stringsAsFactors = FALSE)
}

# 1.2.2 F/V Comps
if (!NonOF) {
```

Page 4

CONFIDENTIAL

```r
    ValComps <- sqlQuery(CM_odbc, "SELECT * FROM qry_Scoring_Valocity_CompsData",
        stringsAsFactors = FALSE)
}
if (NonOF) {
    ValComps <- sqlQuery(CM_odbc, "SELECT * FROM qry_Scoring_Valocity_CompsDataNonOF",
        stringsAsFactors = FALSE)
}


# 1.3 Read in Income Property Information
# -------------------------------------


# 1.3.1 Subject Income InformationUnits
if (!NonOF) {
    SubIncProps <- sqlQuery(CM_odbc, "SELECT * FROM qry_Scoring_SubjIncPropUnits",
        stringsAsFactors = FALSE)
}
if (NonOF) {
    SubIncProps <- sqlQuery(CM_odbc, "SELECT * FROM qry_Scoring_SubjIncPropUnitsNonOF",
        stringsAsFactors = FALSE)
}


# 1.3.2 Rental Comps
if (!NonOF) {
    RentComps <- sqlQuery(CM_odbc, "SELECT * FROM qry_Scoring_CompRentals",
        stringsAsFactors = FALSE)
}
if (NonOF) {
    RentComps <- sqlQuery(CM_odbc, "SELECT * FROM qry_Scoring_CompRentalsNonOF",
        stringsAsFactors = FALSE)
}


# 1.3.3 Sale Comps
# ----------------------------------------------------------------
if (!NonOF) {
    CompSalesRentalUnits <- sqlQuery(CM_odbc, "SELECT * FROM qry_Scoring_CompSalesRentalUnits",
        stringsAsFactors = FALSE)
}
if (NonOF) {
    CompSalesRentalUnits <- sqlQuery(CM_odbc, "SELECT * FROM qry_Scoring_CompSalesRentalUnitsNonOF",
        stringsAsFactors = FALSE)
}


# 1.5 Close ODBC Connection
# -------------------------------------------------
```

CONFIDENTIAL

```
odbcClose(CM_odbc)
```

CONFIDENTIAL

Code for Calculating Questions

```r
# 0.1 Remove Records with Necessary Missing Data and trim
# columns

RawData <- RawData[!is.na(RawData$AppraisalPurpose), ]
RawData <- RawData[!is.na(RawData$AppraisedValue), c("GlobalLoanNo",
    "GAID", "LoanID", "Case", "AppraisedValue", "Condo", "AppraisedValueDate",
    "AppraisalPurpose", "MultiUnit", "AddressLegalParcelSufficientToIDSubj",
    "OriginalListingDate1", "OriginalListingDate2", "OffMarketDate1",
    "OffMarketDate2", "DaysOnMarket1", "DaysOnMarket2", "EffectiveDateofValue",
    "SubjectListing", "ListedWithin12Months", "LastListingPrice1",
    "LastListingPrice2", "AppraiserReportedContract", "AppraiserReportedAnalysisofContract",
    "SupplyDemandDesc", "YearPriorListingsExpiredOrWithdrawn",
    "YearPriorHomesSold", "MedianSalesPrice0to3", "MedianSalesPrice4to6",
    "MedianSalesPrice7to9", "MedianSalesPrice10to12", "PropertyValueTrends",
    "AvgDOM0to3", "AvgDOM4to6", "AvgDOM7to9", "AvgDOM10to12",
    "MarketingTime", "SubjectSalesHistoryReportedCorrectly",
    "SubjectSiteCorrect", "PriorSalesAnalyzed", "PriorSaleDate1",
    "PriorSalePrice1", "DE_CostApproachCompleted", "SiteValue",
    "IndicatedValue", "CostApproachIsPhyDepreciationCorrect",
    "ExternalObsolescenseAccurate", "CompsWhenBrokerBuilderDataSourceIsSaleConfirmedBy3rdParty",
    "CompsOneCondoCompOutsideComplex", "CompsReconciliationDoesAppValueFallIntoAdjCompSaleRange",
    "IncRecGrossRentMultiplier")]

# Fix all date fields from SubjData query
if (is.character(RawData$OriginalListingDate2)) {
    RawData$OriginalListingDate2 <- as.Date(RawData$OriginalListingDate2,
        "%m/%d/%Y")
}
if (is.character(RawData$OffMarketDate2)) {
    RawData$OffMarketDate2 <- as.Date(RawData$OffMarketDate2,
        "%m/%d/%Y")
}

RawData$AppraisedValueDate <- as.Date(RawData$AppraisedValueDate,
    "%Y-%m-%d")
RawData$OriginalListingDate1 <- as.Date(RawData$OriginalListingDate1,
    "%Y-%m-%d")
RawData$OriginalListingDate2 <- as.Date(RawData$OriginalListingDate2,
    "%Y-%m-%d")
RawData$OffMarketDate1 <- as.Date(RawData$OffMarketDate1, "%Y-%m-%d")
RawData$OffMarketDate2 <- as.Date(RawData$OffMarketDate2, "%Y-%m-%d")
RawData$EffectiveDateofValue <- as.Date(RawData$EffectiveDateofValue,
    "%Y-%m-%d")
RawData$PriorSaleDate1 <- as.Date(RawData$PriorSaleDate1, "%Y-%m-%d")
```

CONFIDENTIAL

```r
# 0.2 Create a Subject Data Object with the 7 basic Fields
# ---------------------

SData <- RawData[RawData$Case == Case.Name, c("GlobalLoanNo",
    "GAID", "LoanID", "Case", "AppraisedValue", "AppraisedValueDate",
    "AppraisalPurpose", "MultiUnit")]


# 1.0 Q1 - Is legal address insufficient
# ---------------------------------------


# 1.1 Fix Raw Data Codes

RawData$AddressLegalParcelSufficientToIDSubj <- as.character(RawData$AddressLegalParcelSufficientToIDSubj)
RawData$AddressLegalParcelSufficientToIDSubj[RawData$AddressLegalParcelSufficientToIDSubj ==
    "15"] <- "Yes"
RawData$AddressLegalParcelSufficientToIDSubj[RawData$AddressLegalParcelSufficientToIDSubj ==
    "16"] <- "No"
RawData$AddressLegalParcelSufficientToIDSubj[RawData$AddressLegalParcelSufficientToIDSubj ==
    "17"] <- "Can't Determine"
RawData$AddressLegalParcelSufficientToIDSubj[RawData$AddressLegalParcelSufficientToIDSubj ==
    "41"] <- "No Data"


# 1.2 Calculate Field

SData$Q1 <- ifelse(RawData$AddressLegalParcelSufficientToIDSubj ==
    "No", 1, 0)


# 1.3 Deal with Missings

SData$Q1[is.na(RawData$AddressLegalParcelSufficientToIDSubj)] <- -99
SData$Q1[RawData$AddressLegalParcelSufficientToIDSubj == ""] <- -99


# 2.0 Q2 - Inaccurate reporting of listing history
# -----------------------------


# 2.1 If information on most recent listing is missing,
# grab info from second At the same time, make sure the
# dates are converted to data objects

both <- which(!is.na(RawData$OriginalListingDate1) & !is.na(RawData$OriginalListingDate2))
both.wrong <- which(RawData$OriginalListingDate1[both] < RawData$OriginalListingDate2[both])
only2 <- which(!is.na(RawData$OriginalListingDate2) & is.na(RawData$OriginalListingDate1))

RawData$OriginalListingDate <- RawData$OriginalListingDate1
```

CONFIDENTIAL

```r
RawData$OriginalListingDate[only2] <- RawData$OriginalListingDate2[only2]
RawData$OriginalListingDate[both[both.wrong]] <- RawData$OriginalListingDate2[both[both.wrong]]

RawData$OriginalListingPrice <- RawData$OriginalListingPrice1
RawData$OriginalListingPrice[only2] <- RawData$OriginalListingPrice2[only2]
RawData$OriginalListingPrice[both[both.wrong]] <- RawData$OriginalListingPrice2[both[both.wrong]]

RawData$LastListingPrice <- RawData$LastListingPrice1
RawData$LastListingPrice[only2] <- RawData$LastListingPrice2[only2]
RawData$LastListingPrice[both[both.wrong]] <- RawData$LastListingPrice2[both[both.wrong]]

RawData$OffMarketDate <- RawData$OffMarketDate1
RawData$OffMarketDate[only2] <- RawData$OffMarketDate2[only2]
RawData$OffMarketDate[both[both.wrong]] <- RawData$OffMarketDate2[both[both.wrong]]

RawData$DaysOnMarket <- RawData$DaysOnMarket1
RawData$DaysOnMarket[only2] <- RawData$DaysOnMarket2[only2]
RawData$DaysOnMarket[both[both.wrong]] <- RawData$DaysOnMarket2[both[both.wrong]]

# 2.2 Calculate Question
# ----------------------------------------------------------

# Set to 0
SData$Q2 <- 0

# Begin Loop through properties
for (i in 1:dim(SData)[1]) {

    # if it has prior listing
    if (!is.na(RawData$OriginalListingDate[i]) | !is.na(RawData$OffMarketDate[i])) {

        # if missing Off Market Date, Set correct OffMarketDate
        if (!is.na(RawData$OriginalListingDate[i]) & is.na(RawData$OffMarketDate[i])) {
            RawData$OffMarketDate[i] <- RawData$OriginalListingDate[i] +
                RawData$DaysOnMarket[i]
        }

        # if missing Listing Date, set correct listing date
        if (is.na(RawData$OriginalListingDate[i]) & !is.na(RawData$OffMarketDate[i])) {
            RawData$OriginalListingDate[i] <- RawData$OffMarketDate[i] -
                RawData$DaysOnMarket[i]
        }

        # Calculate the exact days it was on market
        DaysOnMarket <- RawData$OriginalListingDate[i]:RawData$OffMarketDate[i]
```

CONFIDENTIAL

```r
        # If there are some days on market
        if (!is.na(DaysOnMarket)[1]) {

            # calculate the relative days on market
            NetDOM <- as.numeric(RawData$EffectiveDateofValue[i]) -
                DaysOnMarket

            # if on market in previous year
            if (length(which(NetDOM > 0 & NetDOM < 365)) > 0) {

                # if appraiser didn't note a listing, put 1, else 0
                SData$Q2[i] <- ifelse(RawData$SubjectListing[i] ==
                  "No", 1, 0)
            }
        }
    }
}


# 2.3 Deal with Missings
# ----------------------------------------------------------

SData$Q2[is.na(RawData$SubjectListing)] <- -99
SData$Q2[is.na(RawData$ListedWithin12Months)] <- -99
SData$Q2[RawData$SubjectListing == ""] <- -99


# 3.0 Q3 - If prior listings, was appraised higher than
# listing? ---------------

# 3.1 Calc Field

SData$Q3 <- ifelse(RawData$ListedWithin12Months == "Yes" & RawData$OriginalListingDate <
    SData$AppraisedValueDate & SData$AppraisedValueDate - RawData$OriginalListingDate <
    367 & RawData$AppraisedValue > RawData$LastListingPrice,
    1, 0)


# 3.2 Deal with Missings

SData$Q3[RawData$ListedWithin12Months == "No"] <- -1
SData$Q3[SData$Q2 == -99] <- -99
SData$Q3[is.na(SData$Q3)] <- -99


# 4.0 Q4 If ApprVal > Listing is it more than 10% higher
# ----------------------
```

CONFIDENTIAL

```r
# 4.1 Calc Field.  If a finding for Q3 and if apprval is
# 10% higher, then a finding

SData$Q4 <- ifelse(SData$Q3 == 1 & (RawData$AppraisedValue/RawData$LastListingPrice) >=
    1.1, 1, 0)

# 4.2 Deal with Missings
SData$Q4[RawData$ListedWithin12Months == "No"] <- -1
SData$Q4[SData$Q2 == -99] <- -99
SData$Q4[SData$Q3 == 0] <- -1

# 5.0 Q5 Failure to Report Sales Contract
# -------------------------------------

# 5.1 Fix Data codes

RawData$AppraiserReportedContract <- as.character(RawData$AppraiserReportedContract)
RawData$AppraiserReportedContract[RawData$AppraiserReportedContract ==
    "28"] <- "Yes"
RawData$AppraiserReportedContract[RawData$AppraiserReportedContract ==
    "29"] <- "No"
RawData$AppraiserReportedContract[RawData$AppraiserReportedContract ==
    "30"] <- "NA"

# 5.2 Calc Field.  If a Purchase and if no contract
# reported

SData$Q5 <- ifelse(RawData$AppraisalPurpose == "Purchase" & RawData$AppraiserReportedContract ==
    "No", 1, 0)

# 5.3 Deal with Missings

SData$Q5[RawData$AppraisalPurpose == "Refinance"] <- -1

# 6.0 Q6 Reported Contract, Didn't Analyze it
# --------------------------------

# 6.1 Fix Data codes

RawData$AppraiserReportedAnalysisofContract <- as.character(RawData$AppraiserReportedAnalysisofContract)
RawData$AppraiserReportedAnalysisofContract[RawData$AppraiserReportedAnalysisofContract ==
    "28"] <- "Yes"
RawData$AppraiserReportedAnalysisofContract[RawData$AppraiserReportedAnalysisofContract ==
    "29"] <- "No"
RawData$AppraiserReportedAnalysisofContract[RawData$AppraiserReportedAnalysisofContract ==
```

```r
    "30"] <- "NA"


# 6.2 Calc Field


SData$Q6 <- ifelse(RawData$AppraisalPurpose == "Purchase" & RawData$AppraiserReportedContract ==
    "Yes" & RawData$AppraiserReportedAnalysisofContract == "No",
    1, 0)


# 6.3 Deal with Missings


SData$Q6[RawData$AppraisalPurpose == "Refinance"] <- -1
SData$Q6[RawData$AppraisalPurpose == "Purchase" & RawData$AppraiserReportedContract ==
    "No"] <- -1


# 7.0 Q7 Report Supply Demand InCorrectly
# ------------------------------------


# 7.1 Prep Data


# If not reported, default to 'In Balance'
RawData$SupplyDemandDesc[is.na(RawData$SupplyDemandDesc)] <- "In Balance"


# Create separate object
SupDem <- RawData$SupplyDemandDesc


# Calculate actual ratio of Expired and Withdrawn to # sold
MSD <- RawData$YearPriorListingsExpiredOrWithdrawn/(RawData$YearPriorHomesSold +
    0.001)


# Turn Missing into -1
MSD[is.na(MSD)] <- -1


# 7.2 Calc Field


# Set initial to 0
SData$Q7 <- 0


# if appraiser indicates shortage, test to see if expired
# are 1/10 of sales
SData$Q7[SupDem == "Shortage"] <- ifelse(MSD[SupDem == "Shortage"] <
    (1/SD.par), SData$Q7[SupDem == "Shortage"], 1)


# if appraiser put in balance, test to see if sales are >
# 1/10 and less than 10 of expired.
SData$Q7[SupDem == "In Balance"] <- ifelse(MSD[SupDem == "In Balance"] >
```

CONFIDENTIAL

```r
        (1/SD.par) & MSD[SupDem == "In Balance"] < SD.par, SData$Q7[SupDem ==
        "In Balance"], 1)


# if appraiser indicates oversupply, test to see if
# expireds are 10 times the volume of sales
SData$Q7[SupDem == "Over Supply"] <- ifelse(MSD[SupDem == "Over Supply"] >
        SD.par, SData$Q7[SupDem == "Over Supply"], 1)


# convert all those with missing to 0
SData$Q7[MSD == -1] <- 0
SData$Q7[RawData$YearPriorHomesSold == 0] <- 0


# 8.0 Q8 Report Value Trends InCorrectly
# ---------------------------------------

# 8.1 Calc Field
SData$Q8 <- 0


# 8.1.1 start loop
for (i in 1:dim(SData)[1]) {

    # Select the price data for Property i
    i.data <- RawData[i, c("MedianSalesPrice0to3", "MedianSalesPrice4to6",
        "MedianSalesPrice7to9", "MedianSalesPrice10to12")]

    # remove missing or 0 values
    i.data[is.na(i.data)] <- 0
    i.data <- as.numeric(i.data[i.data != 0])

    # if more than one entry run regression to calculate
    # appreciation rate
    if (length(i.data) > 1) {

        # Calc rate
        apr.rate <- -as.numeric(lm(i.data ~ I(1:length(i.data)))$coef[2])/mean(i.data)

        # if greater than trend, consider increasing
        val.trend <- ifelse(apr.rate > VT.par, "Increasing",
            "Stable")

        # if less than trend, consider decreasing
        val.trend <- ifelse(apr.rate < (-VT.par), "Declining",
            val.trend)

        # compare to appraiser
```

CONFIDENTIAL

```r
        SData$Q8[i] <- ifelse(RawData$PropertyValueTrends[i] ==
            val.trend, 0, 1)
    }
    if (length(i.data) <= 1) {
        SData$Q8[i] <- -1
    }
}


# 8.2 Fix Missings
SData$Q8[is.na(SData$Q8)] <- -99


# 9.0 Q9 Report Marketing Time InCorrectly
# -----------------------------------


# 9.1 Set up Data


# build simple count function
countNotZero <- function(x) {
    length(which(x != 0))
}


# calculate average DOM for each record
AvgDOM <- (RawData$AvgDOM0to3 + RawData$AvgDOM4to6 + RawData$AvgDOM7to9 +
    RawData$AvgDOM10to12)/apply(cbind(RawData$AvgDOM0to3, RawData$AvgDOM4to6,
    RawData$AvgDOM7to9, RawData$AvgDOM10to12), 1, countNotZero)
# fix NAs
AvgDOM[is.na(AvgDOM)] <- -1


# set default
RawData$MarketingTime[is.na(RawData$MarketingTime)] <- "3-6 mos"


# 9.2 Calc Field


SData$Q9 <- 0


# if less than 91, label as under 3 mos
SData$Q9[RawData$MarketingTime == "Under 3 mos"] <- ifelse(AvgDOM[RawData$MarketingTime ==
    "Under 3 mos"] < 91, SData$Q9[RawData$MarketingTime == "Under 3 mos"],
    1)


# if less than 182 and more than 90, label as 3-6 mos
SData$Q9[RawData$MarketingTime == "3-6 mos"] <- ifelse(AvgDOM[RawData$MarketingTime ==
    "3-6 mos"] > 90 & AvgDOM[RawData$MarketingTime == "3-6 mos"] <
    182, SData$Q9[RawData$MarketingTime == "3-6 mos"], 1)
```

CONFIDENTIAL

```r
# if more than 181, label as over 6 mos
SData$Q9[RawData$MarketingTime == "Over 6 mos"] <- ifelse(AvgDOM[RawData$MarketingTime ==
    "Over 6 mos"] > 181, SData$Q9[RawData$MarketingTime == "Over 6 mos"],
    1)


# give a -1 for missing data
SData$Q9[AvgDOM == -1] <- -1


# 10.0 Q10 Is subject site description incorrect?
# -----------------------------


# 10.1 Set up Data

RawData$SubjectSiteCorrect <- as.character(RawData$SubjectSiteCorrect)
RawData$SubjectSiteCorrect[RawData$SubjectSiteCorrect == "15"] <- "Yes"
RawData$SubjectSiteCorrect[RawData$SubjectSiteCorrect == "16"] <- "No"
RawData$SubjectSiteCorrect[RawData$SubjectSiteCorrect == "41"] <- "No Data"


# 10.2 Calc Field

SData$Q10 <- ifelse(RawData$SubjectSiteCorrect == "No", 1, 0)


# 10.3 Deal with Missings

SData$Q10[RawData$SubjectSiteCorrect == ""] <- -99
SData$Q10[is.na(SData$Q10)] <- -99


# 11.0 Q11 Is subject Sales history reported incorrectly?
# ---------------------


# 11.1 Set up Data

RawData$SubjectSalesHistoryReportedCorrectly <- as.character(RawData$SubjectSalesHistoryReportedCorrectly)
RawData$SubjectSalesHistoryReportedCorrectly[RawData$SubjectSalesHistoryReportedCorrectly ==
    "15"] <- "Yes"
RawData$SubjectSalesHistoryReportedCorrectly[RawData$SubjectSalesHistoryReportedCorrectly ==
    "16"] <- "No"
RawData$SubjectSalesHistoryReportedCorrectly[RawData$SubjectSalesHistoryReportedCorrectly ==
    "17"] <- "Can't Determine"
RawData$SubjectSalesHistoryReportedCorrectly[RawData$SubjectSalesHistoryReportedCorrectly ==
    "41"] <- "No Data"


# 11.2 Calc Field

SData$Q11 <- ifelse(RawData$SubjectSalesHistoryReportedCorrectly ==
```

CONFIDENTIAL

```r
    "No", 1, -1)
SData$Q11[RawData$SubjectSalesHistoryReportedCorrectly == "Yes"] <- 0


# 11.3 Deal with Missings

SData$Q11[is.na(SData$Q11)] <- -99


# 12.0 Q12 Fail to Analyze all Prior Sales
# -----------------------------------

# 12.1 Fix Data

RawData$PriorSalesAnalyzed <- as.character(RawData$PriorSalesAnalyzed)
RawData$PriorSalesAnalyzed[RawData$PriorSalesAnalyzed == "28"] <- "Yes"
RawData$PriorSalesAnalyzed[RawData$PriorSalesAnalyzed == "29"] <- "No"
RawData$PriorSalesAnalyzed[RawData$PriorSalesAnalyzed == "30"] <- "NA"


# 12.2 Calc Field

SData$Q12 <- ifelse(RawData$PriorSalesAnalyzed == "No", 1, 0)


# 12.3 Deal with Missings

SData$Q12[RawData$PriorSalesAnalyzed == ""] <- -99
SData$Q12[is.na(RawData$PriorSalesAnalyzed)] <- -1


# 13.0 Q13 Appreciation greater than 10% annualized
# ---------------------------

# 13.1 Set up Data

# Calculate yearly difference between Prior Sale and
# appraised date
YearDif <- as.numeric(RawData$AppraisedValueDate - RawData$PriorSaleDate1)/365
YearDif[is.na(YearDif)] <- 0

# Calculate price difference between prior sale and
# appraised value
PriceDif <- RawData$AppraisedValue/RawData$PriorSalePrice1
PriceDif[is.na(PriceDif)] <- 0
PriceDif[!is.finite(PriceDif)] <- 0
PriceDif[RawData$PriorSalePrice1 <= 1000] <- 0

# Calculate annualized price change
YearAppr <- (PriceDif - 1)/YearDif
```

```r
YearAppr[!is.finite(YearAppr)] <- 0


# 13.2 Calc Field
SData$Q13 <- ifelse(YearAppr > 0.1, 1, 0)


# 13.3 Deal with Missing and PriceDif of 0
SData$Q13[is.na(YearAppr)] <- -1
SData$Q13[PriceDif == 0] <- 0
SData$Q13[YearDif < 0 | YearDif > 3] <- 0


# 14.0 Q14 Is land value ratio less than .2 or more than
# .3? -------------------


# 14.1 Calc Field if cost approach completed and outside
# these bounds

SData$Q14 <- ifelse(RawData$DE_CostApproachCompleted == "Yes" &
    (RawData$SiteValue/RawData$IndicatedValue < 0.2 | RawData$SiteValue/RawData$IndicatedValue >
        0.3), 1, 0)


# 14.2 Deal with Missings

SData$Q14[RawData$DE_CostApproachCompleted == "No"] <- -1
SData$Q14[is.na(SData$Q14)] <- -99


# 15.0 Q15 Is cost approach not reported?
# --------------------------------------

# 15.1 Calc Field

SData$Q15 <- ifelse(RawData$DE_CostApproachCompleted == "No",
    1, 0)


# 15.2 Deal with Missings

SData$Q15[RawData$DE_CostApproachCompleted == ""] <- -99
SData$Q15[RawData$Condo == 1] <- -1
SData$Q15[is.na(SData$Q15)] <- -99


# 16.0 Q16 If cost approach is Physical Depreciation
# incorrect? ----------------

# 16.1 Fix Data

RawData$CostApproachIsPhyDepreciationCorrect <- as.character(RawData$CostApproachIsPhyDepreciationCorrect)
```

```r
RawData$CostApproachIsPhyDepreciationCorrect[RawData$CostApproachIsPhyDepreciationCorrect ==
    "28"] <- "Yes"
RawData$CostApproachIsPhyDepreciationCorrect[RawData$CostApproachIsPhyDepreciationCorrect ==
    "29"] <- "No"
RawData$CostApproachIsPhyDepreciationCorrect[RawData$CostApproachIsPhyDepreciationCorrect ==
    "30"] <- "NA"


# 16.2 Calc Field

SData$Q16 <- ifelse(RawData$DE_CostApproachCompleted == "Yes" &
    RawData$CostApproachIsPhyDepreciationCorrect == "No", 1,
    0)


# 16.3 Deal with Missings

SData$Q16[RawData$DE_CostApproachCompleted == ""] <- -99
SData$Q16[RawData$CostApproachIsPhyDepreciationCorrect == ""] <- -99
SData$Q16[RawData$DE_CostApproachCompleted == "No"] <- -1
SData$Q16[is.na(SData$Q16)] <- -99


# 17.0 Q17 Is external obsolescence not reported correctly?
# --------------------


# 17.1 Fix Data

RawData$ExternalObsolescenseAccurate <- as.character(RawData$ExternalObsolescenseAccurate)
RawData$ExternalObsolescenseAccurate[RawData$ExternalObsolescenseAccurate ==
    "13"] <- "Yes"
RawData$ExternalObsolescenseAccurate[RawData$ExternalObsolescenseAccurate ==
    "14"] <- "No"


# 17.2 Calc Field

SData$Q17 <- ifelse(RawData$ExternalObsolescenseAccurate == "No",
    1, 0)


# 17.3 Deal with Missings

SData$Q17[RawData$ExternalObsolescenseAccurate == ""] <- -99
SData$Q17[is.na(SData$Q17)] <- -99


# 18.0 Q18 Is broker/builder source for comps?
# --------------------------------


# 18.1 Fix Data
```

CONFIDENTIAL

```r
RawData$CompsWhenBrokerBuilderDataSourceIsSaleConfirmedBy3rdParty <- as.character(RawData$CompsWhenBrokerB
RawData$CompsWhenBrokerBuilderDataSourceIsSaleConfirmedBy3rdParty[RawData$CompsWhenBrokerBuilderDataSource
    "28"] <- "Yes"
RawData$CompsWhenBrokerBuilderDataSourceIsSaleConfirmedBy3rdParty[RawData$CompsWhenBrokerBuilderDataSource
    "29"] <- "No"
RawData$CompsWhenBrokerBuilderDataSourceIsSaleConfirmedBy3rdParty[RawData$CompsWhenBrokerBuilderDataSource
    "30"] <- "NA"


# 18.2 Calc Field

SData$Q18 <- ifelse(RawData$CompsWhenBrokerBuilderDataSourceIsSaleConfirmedBy3rdParty ==
    "Yes", 0, 1)


# 18.3 Fix Missings

SData$Q18[RawData$CompsWhenBrokerBuilderDataSourceIsSaleConfirmedBy3rdParty ==
    "NA"] <- -1
SData$Q18[is.na(RawData$CompsWhenBrokerBuilderDataSourceIsSaleConfirmedBy3rdParty)] <- -1


# 19.0 Q19 Are all comps with same condo building?
# ---------------------------- 19.1 Fix Data

RawData$CompsOneCondoCompOutsideComplex <- as.character(RawData$CompsOneCondoCompOutsideComplex)
RawData$CompsOneCondoCompOutsideComplex[RawData$CompsOneCondoCompOutsideComplex ==
    "28"] <- "Yes"
RawData$CompsOneCondoCompOutsideComplex[RawData$CompsOneCondoCompOutsideComplex ==
    "29"] <- "No"
RawData$CompsOneCondoCompOutsideComplex[RawData$CompsOneCondoCompOutsideComplex ==
    "30"] <- "NA"


# 19.2 Calc Field

SData$Q19 <- ifelse(RawData$CompsOneCondoCompOutsideComplex ==
    "No", 1, 0)


# 19.3 Deal with Missings

SData$Q19[RawData$CompsOneCondoCompOutsideComplex == ""] <- -99
SData$Q19[RawData$Condo == 0] <- -1
SData$Q19[is.na(SData$Q19)] <- -99


# 20.0 Q20 Are any of comps incorrectly reported
# ------------------------------
```

CONFIDENTIAL

```r
# 20.1 Calc Fields

SData$Q20 <- 0
for (i in 1:dim(SData)[1]) {

    # Select comps for subjects i
    i.data <- GAComps[GAComps$GlobalLoanNo == SData$GlobalLoanNo[i],
        ]

    # Trim to those with price data
    i.data <- i.data[which(!is.na(i.data$CompSalesPrice) & !is.na(i.data$CompSalePriceCorrection)),
        ]

    # count how many are more than INC.par different
    dif.sum <- sum(ifelse(abs(i.data$CompSalesPrice - i.data$CompSalePriceCorrection)/i.data$CompSalePrice
        INC.par, 1, 0))

    # if any are different, then a finding
    SData$Q20[i] <- ifelse(dif.sum > 0, 1, 0)
}


# 21.0 Q21 Are any of comps showing +10% annual
# appreciation -------------------

GAComps$CompSalesDate <- as.Date(GAComps$CompSalesDate, "%Y-%m-%d")
GAComps$CompPriorSaleDate <- as.Date(GAComps$CompPriorSaleDate,
    "%Y-%m-%d")


# 21.1 Calc Field

SData$Q21 <- 0
for (i in 1:dim(SData)[1]) {

    # isolate comps for subject i
    i.data <- GAComps[GAComps$GlobalLoanNo == SData$GlobalLoanNo[i],
        ]

    # select only those with sale/resale
    i.data <- i.data[!is.na(i.data$CompPriorSalePrice), ]

    if (dim(i.data)[1] > 0) {

        # Calculate time difference between sales
        YearDif <- as.numeric(i.data$CompSalesDate - i.data$CompPriorSaleDate)/365
```

CONFIDENTIAL

```r
        # calculate price difference between sales
        PriceDif <- i.data$CompSalesPrice/i.data$CompPriorSalePrice

        # calculate change in price
        YearAppr <- (PriceDif - 1)/YearDif

        # if annualized change is greater than 10% then a finding
        SData$Q21[i] <- ifelse(sum(which(YearAppr > 0.1)) > 0,
            1, 0)
    }
}


# 22.0 Q22 Is Appraised Value outside of comp range?
# ----------------------------


# 22.1 Calc Field

SData$Q22 <- 0
for (i in 1:dim(SData)[1]) {

    # Select comps for property i
    i.data <- GAComps[GAComps$GlobalLoanNo == SData$GlobalLoanNo[i],
        ]

    # select comp prices
    cprices <- i.data$CompSalesPrice

    # remove any invalide prices
    cprices <- cprices[!is.na(cprices)]

    # If appraisal value is not bracketed a finding occurs
    if (length(cprices) == 0) {
        SData$Q22[i] <- -99
    }

    if (length(cprices) > 0) {
        SData$Q22[i] <- ifelse(SData$AppraisedValue[i] >= min(cprices) &
            SData$AppraisedValue[i] <= max(cprices), 0, 1)
    }
}


# 23.0 Q23 Does Recon Value fall outside of Adjusted comp
# range? ---------------


# 23.1 Fix Data
```

CONFIDENTIAL

```r
RawData$CompsReconciliationDoesAppValueFallIntoAdjCompSaleRange <- as.character(RawData$CompsReconciliation
RawData$CompsReconciliationDoesAppValueFallIntoAdjCompSaleRange[RawData$CompsReconciliationDoesAppValueFal
    "13"] <- "Yes"
RawData$CompsReconciliationDoesAppValueFallIntoAdjCompSaleRange[RawData$CompsReconciliationDoesAppValueFal
    "14"] <- "No"

# 23.2 Calc Field

SData$Q23 <- ifelse(RawData$CompsReconciliationDoesAppValueFallIntoAdjCompSaleRange ==
    "No", 1, 0)

# 23.3 Deal with Missings

SData$Q23[RawData$CompsReconciliationDoesAppValueFallIntoAdjCompSaleRange ==
    ""] <- -99

# 24.0 Q24 is GLM within Range of comps
# ----------------------------------------

# 24.1 Set up Field

SData$Q24 <- 0

# 24.2 Start Loop Through all Props

for (i in 1:dim(SData)[1]) {

    # IF it is a multiunit property
    if (SData$MultiUnit[i] == 1)
        {

            # Select F/V Comps that Match Subject
            subinc <- SubIncProps[SubIncProps$GlobalLoanNo ==
                SData$GlobalLoanNo[i], ]

            # Select Comps Used
            i.data <- GAComps[GAComps$GlobalLoanNo == SData$GlobalLoanNo[i],
                ]

            # Gather GRMs
            cGRM <- i.data$IncPropGrossRentMultiplier
            cGRM <- cGRM[is.na(cGRM) == 0]
            subGRM <- RawData$IncRecGrossRentMultiplier[i]
```

Page 22

CONFIDENTIAL

```r
            # If subject has GRM and more than 1 comp
            if (length(subGRM) > 0 & length(cGRM) > 1) {
                SData$Q24[i] <- ifelse(subGRM < min(cGRM) | subGRM >
                  max(cGRM), 1, 0)
            }

            # If subject has GRM and only one comp
            if (length(subGRM) > 0 & length(cGRM) == 1) {
                SData$Q24[i] <- ifelse(subGRM != min(cGRM), 1,
                  0)
            }
        }  # if(SData$Mul....)
}  # For (i in 1:dim...)


# 24.3 Deal with Missings
SData$Q24[is.na(SData$Q24)] <- -99


# Q25 Is Unit Mix Same
# -----------------------------------------------------------


# 25.1 Set up Field

SData$Q25 <- 0


# 25.2 Start Loop Through all Props

for (i in 1:dim(SData)[1]) {

    # IF it is a multiunit property
    if (SData$MultiUnit[i] == 1)
      {

            # Select F/V Comps that Match Subject
            subinc <- SubIncProps[SubIncProps$GlobalLoanNo ==
                SData$GlobalLoanNo[i], ]

            # Select Comps Used
            i.data <- RentComps[RentComps$GlobalLoanNo == SData$GlobalLoanNo[i],
                ]

            # Calculate Mix of Bed/Baths
            s.mix <- names(table(paste0(subinc$IncPropBeds, ",",
                subinc$IncPropBaths)))
            c.mix <- names(table(paste0(i.data$RentalCompUnitBeds,
                ",", i.data$RentalCompUnitBaths)))
```

CONFIDENTIAL

```r
            # Set up indicator
            m.ind <- 0

            # Run through mix and calc if any not represented
            for (j in 1:length(s.mix)) {
                a <- which(c.mix == s.mix[j])
                if (length(a) == 0) {
                  m.ind <- 1
                }
            }

            # Assign Value
            SData$Q25[i] <- m.ind
        }  # if(SData$Mul....)
}  # For (i in 1:dim...)


# 26.0 Q26 Is rent and Unit mix same
# -------------------------------------------

# 26.1 Set up Field

SData$Q26 <- 0

# 26.2 Start Loop Through all Props

for (i in 1:dim(SData)[1]) {

    # IF it is a multiunit property
    if (SData$MultiUnit[i] == 1)
        {

            # IF Q26 is true this is automatically true
            if (SData$Q25[i] == 1) {
                SData$Q26[i] <- 1
            }

            # IF Q26 is false, do the following:
            if (SData$Q25[i] == 0)
                {

                    # Select F/V Comps that Match Subject
                    subinc <- SubIncProps[SubIncProps$GlobalLoanNo ==
                      SData$GlobalLoanNo[i], ]
```

```r
# Select Comps Used
i.data <- RentComps[RentComps$GlobalLoanNo ==
  SData$GlobalLoanNo[i], ]

# IF both comps are present
if (dim(subinc)[1] > 0 & dim(i.data)[1] > 0)
  {

    # Set subject data
    s.mix <- subinc
    s.mix$UnitMix <- paste0(subinc$IncPropBeds,
      ",", subinc$IncPropBaths)

    # Set FV Comps data
    c.mix <- i.data
    c.mix$UnitMix <- paste0(c.mix$RentalCompUnitBeds,
      ",", c.mix$RentalCompUnitBaths)

    # Loop through each type of unit mix
    for (j in 1:dim(s.mix)[1]) {

      # Set indicator
      m.ind <- 0

      # Select those that match unit mix
      a <- which(c.mix$UnitMix == s.mix$UnitMix[j])
      b <- c.mix$RentalCompUnitMonthlyRent[a]

      # If only one rental comp at this mix
      if (length(b) == 1) {
        m.ind <- ifelse(s.mix$IncPropMonthlyRent[j] ==
          b, 0, 1)
      }

      # If more than one rental comp at this mix
      if (length(b) > 1) {
        m.ind <- ifelse(s.mix$IncPropMonthlyRent[j] >
          max(b[!is.na(b)]) | s.mix$IncPropMonthlyRent[j] <
          min(b[!is.na(b)]), 1, 0)
      }
      m.ind[is.na(m.ind)] <- 0

      # If a mismatch occurs label as a finding
      if (m.ind == 1) {
        SData$Q26[i] <- 1
```

CONFIDENTIAL

```r
                }

              }  # j loop
            }  # if dim
          }  # if q25
        }  #if multi unit
}  # i loop


# 27.0 Q27 to Q31 Comp Usage Analysis
# ----------------------------------------


ValComps$NBRHDSaleDate <- as.Date(ValComps$NBRHDSaleDate, "%Y-%m-%d")


# 27.1 Set Up Blank Fields
SData$Q27 <- 0
SData$Q28 <- 0
SData$Q29 <- 0
SData$Q30 <- 0
SData$Q31 <- 0


if (dim(ValComps)[1] > 0) {
    ValComps$NBRHDLotSizeSF[is.na(ValComps$NBRHDLotSizeSF)] <- ValComps$NBRHDLotSizeAcres[is.na(ValComps$N
        43560
}


# 27.2 Begin Loop through all properties
for (i in 1:dim(SData)[1]) {

    # 27.3 Load in GA and F/V comps
    ga.comp <- GAComps[GAComps$GlobalLoanNo == SData$GlobalLoanNo[i],
        c("GlobalLoanNo", "CompProximity", "CompSalesPrice",
            "CompSalesDate", "CompLotSize", "CompGLASqFt")]
    vc.comp <- ValComps[ValComps$GLN == SData$GlobalLoanNo[i],
        c("GLN", "NBRHDSaleDate", "NBRHDSalePrice", "NBRHDDistanceFromSubject",
            "NBRHDLotSizeSF", "NBRHDAboveGradeGLA")]

    # 27.4 Begin Condition if both comps sets have at least one
    # comp with full information

    if (dim(ga.comp)[1] > 0 & dim(vc.comp)[1] > 0 & length(which(is.na(vc.comp$NBRHDSaleDate))) ==
        0 & length(which(is.na(vc.comp$NBRHDSalePrice))) == 0 &
        length(which(is.na(vc.comp$NBRHDDistance))) == 0)
        {

            # 27.5 Prop GA Comp data
```

CONFIDENTIAL

```r
colnames(ga.comp) <- c("GLN", "Distance", "Price",
    "Date", "LotSize", "GLA")

# Remove Missing Data
ga.comp <- ga.comp[is.na(ga.comp$Date) == 0, ]
ga.comp <- ga.comp[is.na(ga.comp$Distance) == 0,
    ]
ga.comp <- ga.comp[is.na(ga.comp$Price) == 0, ]
ga.comp <- ga.comp[is.na(ga.comp$LotSize) == 0, ]
ga.comp <- ga.comp[is.na(ga.comp$GLA) == 0, ]

# 27.6 Prep F/V Comp Data

# Prep vc.data
colnames(vc.comp) <- c("GLN", "Date", "Price", "Distance",
    "LotSize", "GLA")

# Fix Dates & Remove those with days post effective date
daydif <- as.numeric(SData$AppraisedValueDate[i] -
    vc.comp$Date)
vc.comp <- vc.comp[daydif > 0 & daydif < 366, ]

# Calculate Differences in Comp Distances
SData$Q27[i] <- ifelse(mean(ga.comp$Distance) > mean(vc.comp$Distance[!is.na(vc.comp$Distance)]
    1, 0)

# Calculate Differences in Comp Dates
SData$Q28[i] <- ifelse(mean(as.Date(ga.comp$Date)) <
    mean(vc.comp$Date[!is.na(vc.comp$Date)]), 1,
    0)

# Calculate Differences in $/GLA
SData$Q29[i] <- ifelse(mean(ga.comp$Price/ga.comp$GLA) >
    mean(vc.comp$Price[!is.na(vc.comp$Price) | vc.comp$Price !=
        9999 | !is.na(vc.comp$GLA) | vc.comp$GLA !=
        9999]/vc.comp$GLA[!is.na(vc.comp$Price) | vc.comp$Price !=
        9999 | !is.na(vc.comp$GLA) | vc.comp$GLA !=
        9999]), 1, 0)
# Calculate Differences in Lot Size
SData$Q30[i] <- ifelse(mean(ga.comp$LotSize) > mean(vc.comp$LotSize[!is.na(vc.comp$LotSize) |
    vc.comp$LotSize != 9999]), 1, 0)

# Calculate Differences in GLA
SData$Q31[i] <- ifelse(mean(ga.comp$GLA) > mean(vc.comp$GLA[!is.na(vc.comp$GLA) |
    vc.comp$GLA != 9999]), 1, 0)
```

CONFIDENTIAL

```r
        }  # 27.4 If
}  # 27.2 i


# 28.0 Clean up Data (Export Raw Files for Viewer)
# -----------------------------


SData.Raw <- SData


# 28.1 Fix NAs

for (j in which(colnames(SData) == "Q1"):dim(SData)[2]) {
    gg <- which(is.na(SData[, j]))
    SData[gg, j] <- 0
}


# 28.2 Convert to 0/1

for (j in which(colnames(SData) == "Q1"):dim(SData)[2]) {
    b <- SData[, j]
    b[b < 0] <- 0
    SData[, j] <- b
}
```

APPENDIX 4-5b

Omitted Due to Size